DEPARTMENT OF FISCAL SERVICES

PURCHASING DIVISION

SEMINOLE COUNTY
FLORIDA'S NATURAL CHOICE

August 18, 2005

To: PROSPECTIVE BIDDERS AND ALL OTHERS CONCERNED

From: Diane Reed, Sr. Contracts Analyst

Subject: **PS-0006-05/DRR Construction and Engineering Inspection (CEI) Services for Red Bug Lake and Tuskawilla Rd Intersection Improvements**

Due Date: September 14, 2005 @ 2:00 PM

ADDENDUM #1

The plan drawings are attached.

Failure to acknowledge receipt of this addendum on the submittal <u>may</u> result in disqualification of your bid response.

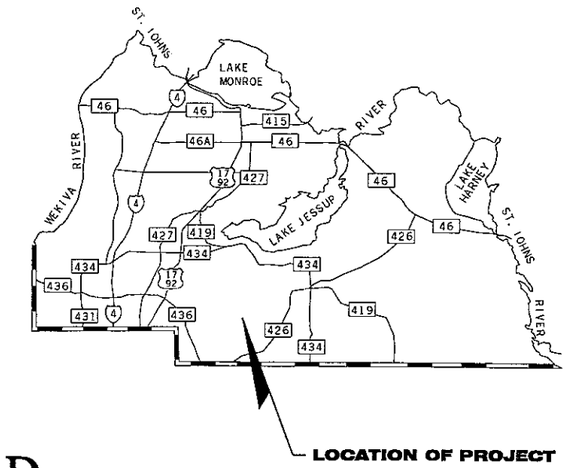
Signature on File

Peter W. Maley, C.P.M., CPCM
Contracts Supervisor

SEMINOLE COUNTY, FLORIDA

PUBLIC WORKS DIRECTOR
GARY JOHNSON, P.E.

COUNTY ENGINEER
JERRY McCOLLUM, P.E.



INDEX OF SIGNING AND PAVEMENT MARKING PLANS

INTERSECTION IMPROVEMENTS
RED BUG LAKE ROAD AND TUSKAWILLA ROAD
SIGNING AND PAVEMENT MARKING PLANS

ROADWAY PLANS
ENGINEER OF RECORD:

FURSAN S. MUNJED, P.E.
PROFESSIONAL ENGINEERING CONSULTANTS, INC
200 EAST ROBINSON STREET SUITE 1560
ORLANDO. FLORIDA 32801

PLANS PREPARED BY:

PEC

PROFESSIONAL ENGINEERING CONSULTANTS, INC
200 EAST ROBINSON STREET SUITE 1560
ORLANDO. FLORIDA 32801

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

60% SUBMITTAL
JULY 15, 2005

GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION,
DESIGN STANDARDS DATED JANUARY 2004,
AND STANDARD SPECIFICATIONS FOR ROAD
AND BRIDGE CONSTRUCTION DATED 2004,
AS AMENDED BY CONTRACT DOCUMENTS

KEY SHEET REVISIONS

DATE	BY	DESCRIPTION

ROADWAY PLANS
ENGINEER OF RECORD: FURSAN S. MUNJED, P.E.
DATE:
P.E NO.: 51446

SHEET NO.
S-1

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TABULATION OF QUANTITIES

BID ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS S-5 ORIG.	S-5 FINAL	S-6 ORIG.	S-6 FINAL	S-7 ORIG.	S-7 FINAL	S-8 ORIG.	S-8 FINAL	S-9 ORIG.	S-9 FINAL	S-10 ORIG.	S-10 FINAL	S-11 ORIG.	S-11 FINAL	S-12 ORIG.	S-12 FINAL	SUB TOTAL ORIG.	SUB TOTAL FINAL	GRAND TOTAL ORIG.	GRAND TOTAL FINAL
700-40-1	SIGN (SINGLE POST) LESS THAN 12 S.F.																					
	R1-1 (30" x 30")	AS																				
	R1-1 (30" x 30"), D-3 (VARIES) 2 EA.	AS																				
	R1-1 (30" x 30"), R3-5R (30" x 36")	AS																				
	R1-1 (30" x 30"), R3-5R (30" x 36"), D-3 (VARIES) 2 EA.	AS																				
	R2-1 (24" x 30")	AS																				
	R3-7R (30" x 30")	AS																				
	R3-9B (24" x 36")	AS																				
	R4-7 (24" x 30"), OM-1 (18" x 18")	AS																				
	R5-1 (30" x 30"), R6-1R (36" x 12")	AS																				
	FTP-28S (24" x 24"), M2-1 (21" x 15")	AS																				
	FTP-28S (24" x 24") 2 EA, M3-2 (24" x 12"), M3-4 (24" x 12"), M5-1 (24" x 12") 2 EA	AS																				
700-46-11	SIGN EXISTING (REMOVE) (SINGLE POST)	AS																				
700-46-21	SIGN EXISTING (RELOCATE) (SINGLE POST)	AS																				

REVISIONS DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FURSAN S. MUNJED, P.E.
PROFESSIONAL ENGINEER CERTIFICATE NO 51446
PROFESSIONAL ENGINEERING CONSULTANTS, INC.
200 EAST ROBINSON STREET SUITE 1560
ORLANDO, FLORIDA 32801
CERTIFICATE OF AUTHORIZATION NO. 3556

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RED BUG LAKE ROAD AND TUSKAWILLA ROAD
INTERSECTION IMPROVEMENTS
TABULATION OF QUANTITIES

SHEET NO.
S-2

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TABULATION OF QUANTITIES

BID ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS S-5 ORIG.	S-5 FINAL	S-6 ORIG.	S-6 FINAL	S-7 ORIG.	S-7 FINAL	S-8 ORIG.	S-8 FINAL	S-9 ORIG.	S-9 FINAL	S-10 ORIG.	S-10 FINAL	S-11 ORIG.	S-11 FINAL	S-12 ORIG.	S-12 FINAL	SUB TOTAL ORIG.	SUB TOTAL FINAL	GRAND TOTAL ORIG.	GRAND TOTAL FINAL
706-3	REFLECTIVE PAVEMENT MARKERS, BI-DIRECTIONAL COLORLESS/RED	EA																				
	REFLECTIVE PAVEMENT MARKERS, BI-DIRECTIONAL AMBER	EA																				
711-3	PAVEMENT MESSAGES, THERMOPLASTIC (ONLY)	EA																				
711-4	DIRECTIONAL ARROWS, THERMOPLASTIC	EA																				
711-5	GUIDE LINES, THERMOPLASTIC (WHITE) (2'-4' SKIP)	LF																				
711-7	PAVEMENT MARKING REMOVAL (THERMOPLASTIC)	SF																				
711-31	SKIP TRAFFIC STRIPE, THERMOPLASTIC (WHITE) (10'-30' SKIP)	GM																				
711-34	SKIP TRAFFIC STRIPE, THERMOPLASTIC (YELLOW) (10'-30' SKIP)	LF																				
	SKIP TRAFFIC STRIPE, THERMOPLASTIC (YELLOW) (6'-10' SKIP)	LF																				
711-35-81	SOLID TRAFFIC STRIPE, THERMOPLASTIC (8" WHITE)	LF																				
711-35-121	SOLID TRAFFIC STRIPE, THERMOPLASTIC (12" WHITE)	LF																				
711-35-181	SOLID TRAFFIC STRIPE, THERMOPLASTIC (18" WHITE)	LF																				
711-35-241	SOLID TRAFFIC STRIPE, THERMOPLASTIC (24" WHITE)	LF																				
711-36-181	SOLID TRAFFIC STRIPE, THERMOPLASTIC (18" YELLOW)	LF																				
711-37-61	SOLID TRAFFIC STRIPE, THERMOPLASTIC (6" WHITE)	NM																				
711-38-61	SOLID TRAFFIC STRIPE, THERMOPLASTIC (6" YELLOW)	NM																				

REVISIONS DATE	BY	DESCRIPTION

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RED BUG LAKE ROAD AND TUSKAWILLA ROAD
INTERSECTION IMPROVEMENTS
TABULATION OF QUANTITIES

SHEET NO.
S-3

GENERAL NOTES

1. EXISTING MARKINGS NEEDING TO BE REMOVED, MAY BE REMOVED BY ANY METHOD WHICH PRODUCES THE SAME RESULTS HYDRO-BLASTING. THE COST FOR REMOVAL OF ANY PAVEMENT MARKINGS NOT COVERED BY A SPECIFIC PAY ITEM NUMBER SHALL BE INCLUDED IN THE RELATED ITEM.

2. IT SHOULD BE NOTED THAT EXISTING SIGNAGE REFLECTS INVENTORY DATA COLLECTED DURING PLANS PREPARATION AND IT IS POSSIBLE THAT ADDITIONAL SIGNS MAY BE PRESENT AT THE TIME OF CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE THE DISPOSITION OF SUCH SIGNS WITH THE ENGINEER.

3. THE PAVEMENT MARKINGS AT ALL EXISTING/PROPOSED INTERFACE LOCATIONS ARE TO MATCH IN TERMS OF ALIGNMENT AND COLOR.

4. SIGNING AND PAVEMENT MARKINGS ARE TO BE PLACED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. THE PLANS, THE TRAFFIC DESIGN STANDARDS. THE ELDER ROAD USERS PROGRAM, AND ADA REQUIREMENTS.

5. TYPE 2 POST MOUNTED OBJECT MARKERS SHALL BE PLACED AT ENDS OF ALL CROSS DRAINS. REFER TO ROADWAY PLANS FOR EXACT LOCATION OF CROSS DRAINS

6. SIGNS THAT ARE TO BE REMOVED FROM THE PROJECT SHOULD BE STOCKPILED SEPARATELY FROM THOSE THAT ARE TO BE RELOCATED.

7. SIDE ROAD STOP BAR LOCATIONS SHOWN ON THE PLANS ARE APPROXIMATE. EXACT LOCATIONS SHOULD BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION IN ORDER TO ENSURE THE MAXIMUM AVAILABLE SIGHT DISTANCE.

8. ALL EXISTING DEPARTMENT OF TRANSPORTATION SIGNS THAT CONFLICT WITH CONSTRUCTION OPERATIONS SHALL BE TAKEN DOWN AND STOCKPILED WITHIN THE R/W LIMITS BY THE CONTRACTOR AS DIRECTED BY THE ENGINEER

9. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PICK UP AND DELIVER ALL STOCKPILED SIGNS TO SEMINOLE COUNTY TRAFFIC ENGINEERING 140 BUSH LOOP, SANFORD, FLORIDA, 32773.

10. THE CONTRACTOR SHALL VERIFY THE LENGTH OF SIGN COLUMN SUPPORTS IN THE FIELD PRIOR TO FABRICATION.

11. THE PAVEMENT MARKINGS AT ALL EXISTING/PROPOSED INTERFACE LOCATIONS ARE TO MATCH IN TERMS OF ALIGNMENT.

12. DUE TO TRACKING BY CONSTRUCTION VEHICLES, REPLACEMENT OF EXISTING PAVEMENT MARKINGS AT THE BEGINNING AND END OF PROJECT MAY BE REQUIRED AT THE CONTRACTOR'S EXPENSE.

13. REFLECTIVE PAVEMENT MARKERS ARE TO BE PLACED IN ACCORDANCE WITH THESE PLANS AND ROADWAY AND TRAFFIC DESIGN STANDARDS, INDEX 17352.

14 A 4 FOOT MINIMUM DISTANCE SHALL BE MAINTAINED BETWEEN ALL MARKED PEDESTRIAN CROSSINGS AND STOPBARS.

15. ALL MEDIAN MOUNTED SIGN SHOULD BE PLACED IN AN 18" x 18" MEDIAN CUT OUT TO MAKE SIGN REPLACEMENT POSSIBLE.

16. THERMOPLASTIC PAVEMENT MARKINGS SHALL NOT BE INSTALLED UNTIL THE FINAL ASPHALT SURFACE HAS CURED FOR 30 DAYS. TEMPORARY PAINT PAVEMENT MARKINGS SHALL BE INSTALLED DURING THE CURE PERIOD, AND PAYMENT SHALL BE INCLUDED IN THE BID PRICES FOR THERMOPLASTIC PAVEMENT MARKINGS.

REVISIONS		
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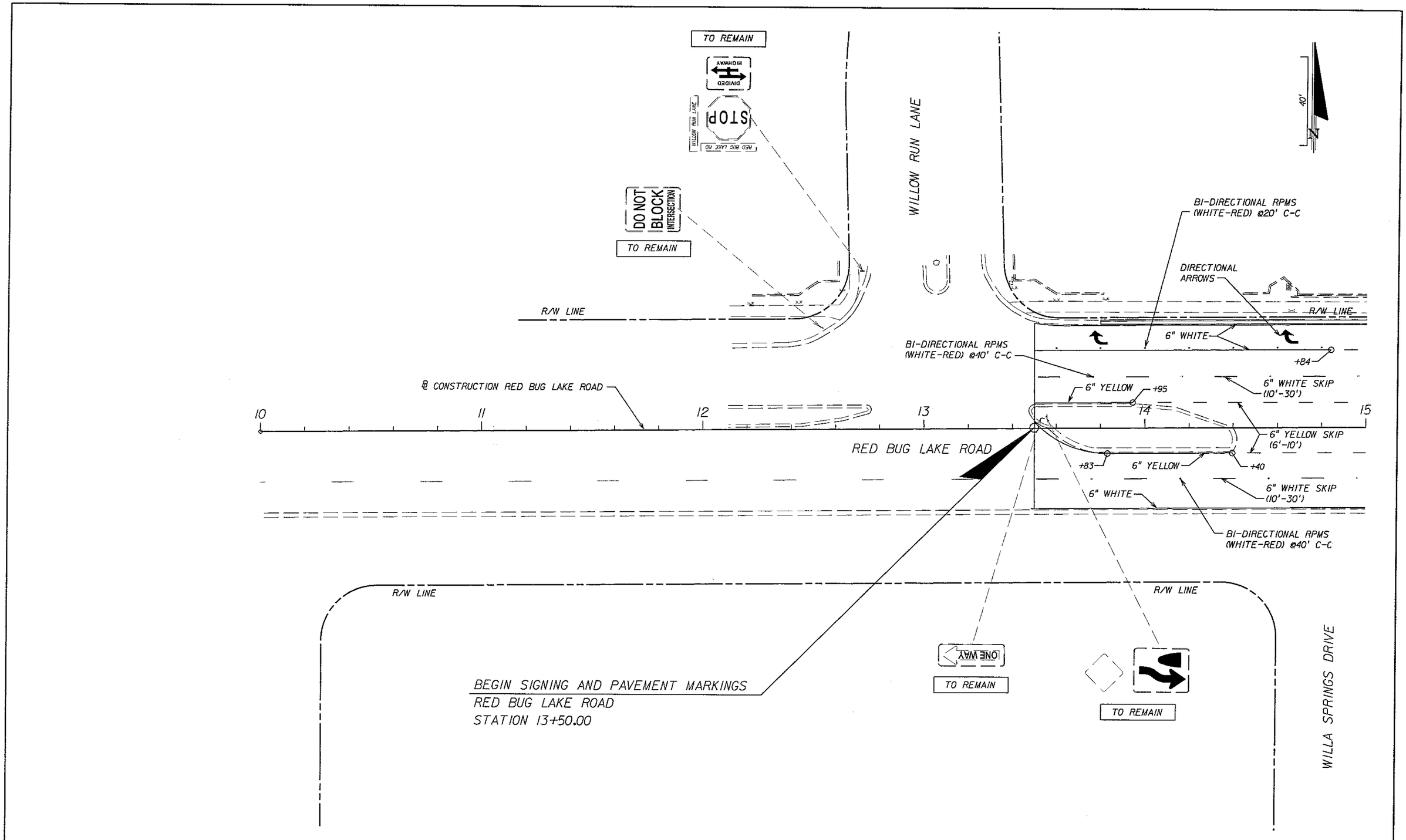
RED BUG LAKE ROAD AND TUSKAWILLA ROAD
INTERSECTION IMPROVEMENTS
GENERAL NOTES

SHEET NO.
S-4



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RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS SIGNING AND PAVEMENT MARKINGS

SHEET NO.
S-5

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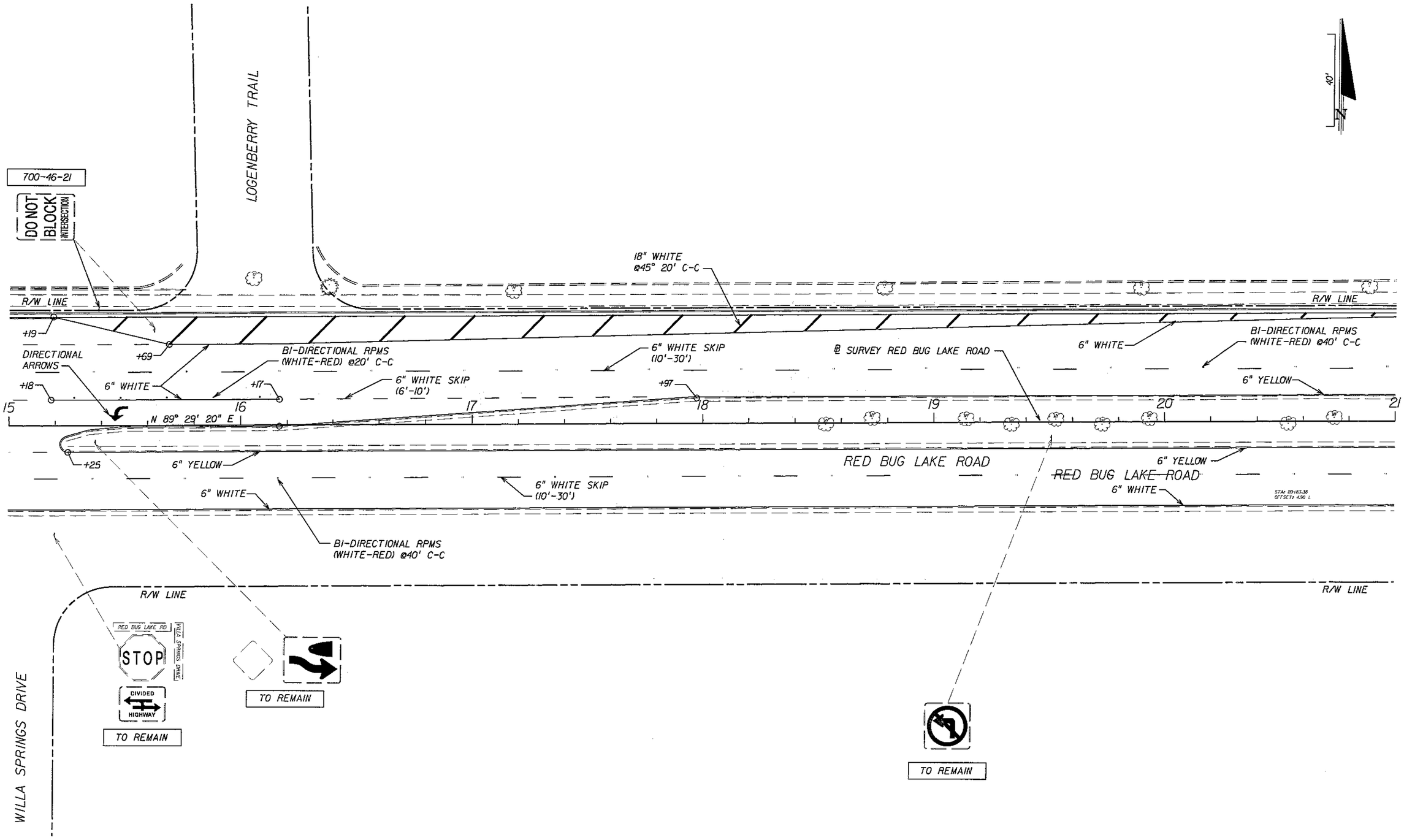

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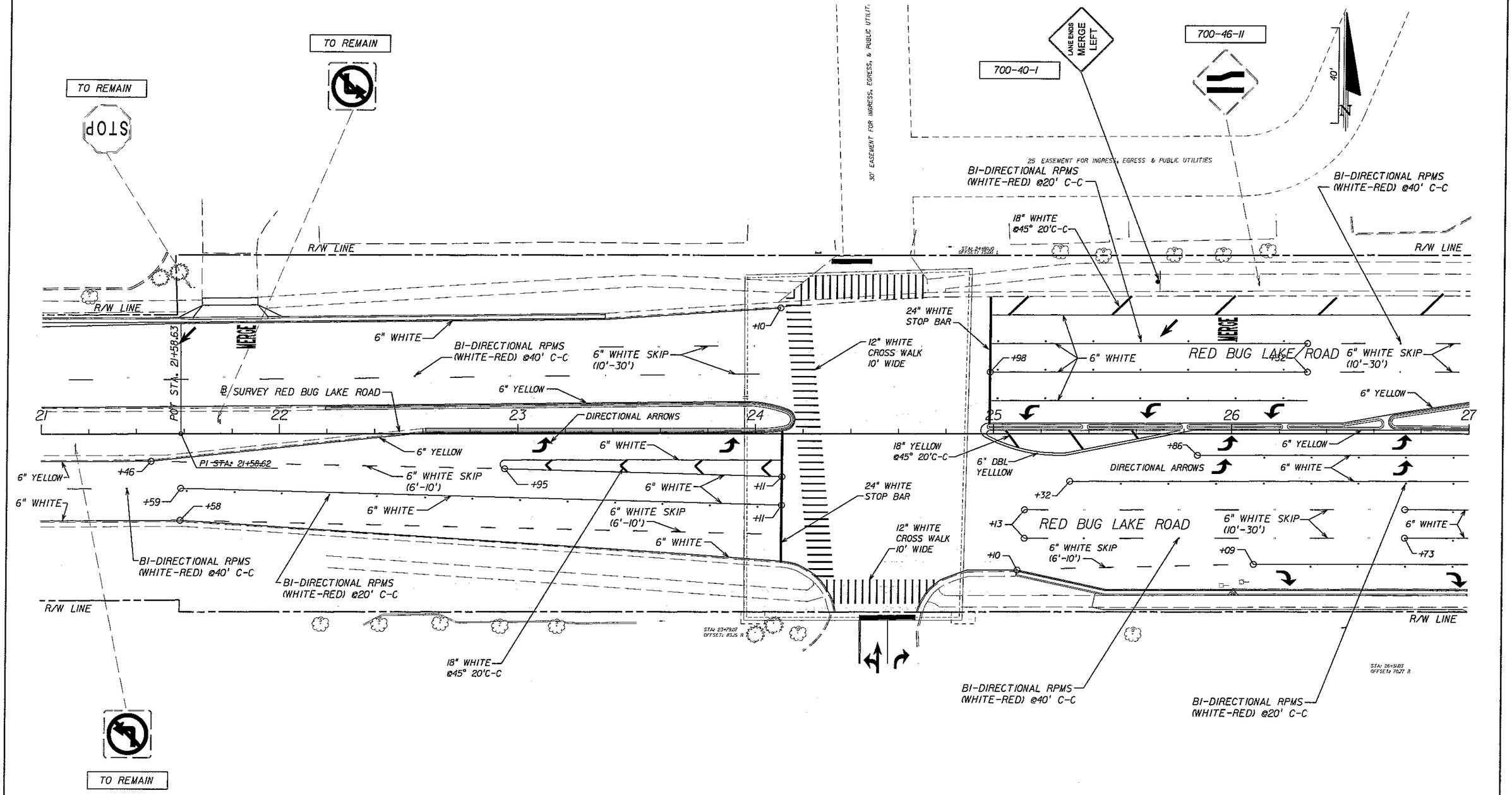
SHEET NO.
S-6



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SHEET NO.
S-7

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700-40-1

700-46-21

700-40-1

700-46-11

RIGHT LANE ENDS

adopt a road

6" WHITE

MATCHLINE SHEET S-12

BI-DIRECTIONAL RPMS (WHITE-RED) @40' C-C

6" WHITE SKIP (10'-30')

6" DBL YELLOW

6" WHITE

TUSKAWILLA ROAD

N 33° 55' 28" W

24" WHITE STOP BAR

24' ACCESS EASEMENT

R/W LINE

BI-DIRECTIONAL RPMS (WHITE-RED) @40' C-C

6" WHITE

6" WHITE SKIP (10'-30')

6" YELLOW

@ SURVEY TUSKAWILLA ROAD

18" WHITE @45° (20' C-C)

BI-DIRECTIONAL RPMS (WHITE-RED) @20' C-C

6" WHITE SKIP (6'-10')

R/W LINE

+75

DIRECTIONAL ARROWS

+16

+28

24" WHITE STOP BAR

6" WHITE

+08

+33

27

@ SURVEY RED BUG LAKE ROAD

28

29

30

31

32

DIRECTIONAL ARROWS

33

6" YELLOW

DIRECTIONAL ARROWS

24" WHITE STOP BAR

+64

+84

24" WHITE STOP BAR

6" WHITE

+04

24" WHITE STOP BAR

DIRECTIONAL ARROWS

NORTH LINE OF THE SOUTHEAST 1/4 OF SECTION 24-21-30

150

RED BUG LAKE ROAD

6" WHITE SKIP (10'-30')

6" WHITE

BI-DIRECTIONAL RPMS (WHITE-RED) @40' C-C

R/W LINE

R/W LINE

24" WHITE STOP BAR

+70

+55

700-40-1

700-40-1

700-46-11

6" WHITE

BI-DIRECTIONAL RPMS (WHITE-RED) @20' C-C

STOP

TO REMAIN

TO

417

TOLL

700-46-21

TO REMAIN

TO REMAIN

6" WHITE SKIP (10'-30')

BI-DIRECTIONAL RPMS (WHITE-RED) @40' C-C

adopt a road

TO REMAIN

BEGIN S&PM TUSKAWILLA ROAD SOUTHBOUND LANES STA. 148+50.00

DIRECTIONAL ARROWS

ONLY

BI-DIRECTIONAL RPMS (WHITE-RED) @20' C-C

BEGIN S&PM TUSKAWILLA ROAD NORTHBOUND LANES STA. 147+70.00

REVISIONS		
DATE	BY	DESCRIPTION

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RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS SIGNING AND PAVEMENT MARKINGS

SHEET NO.
S-8

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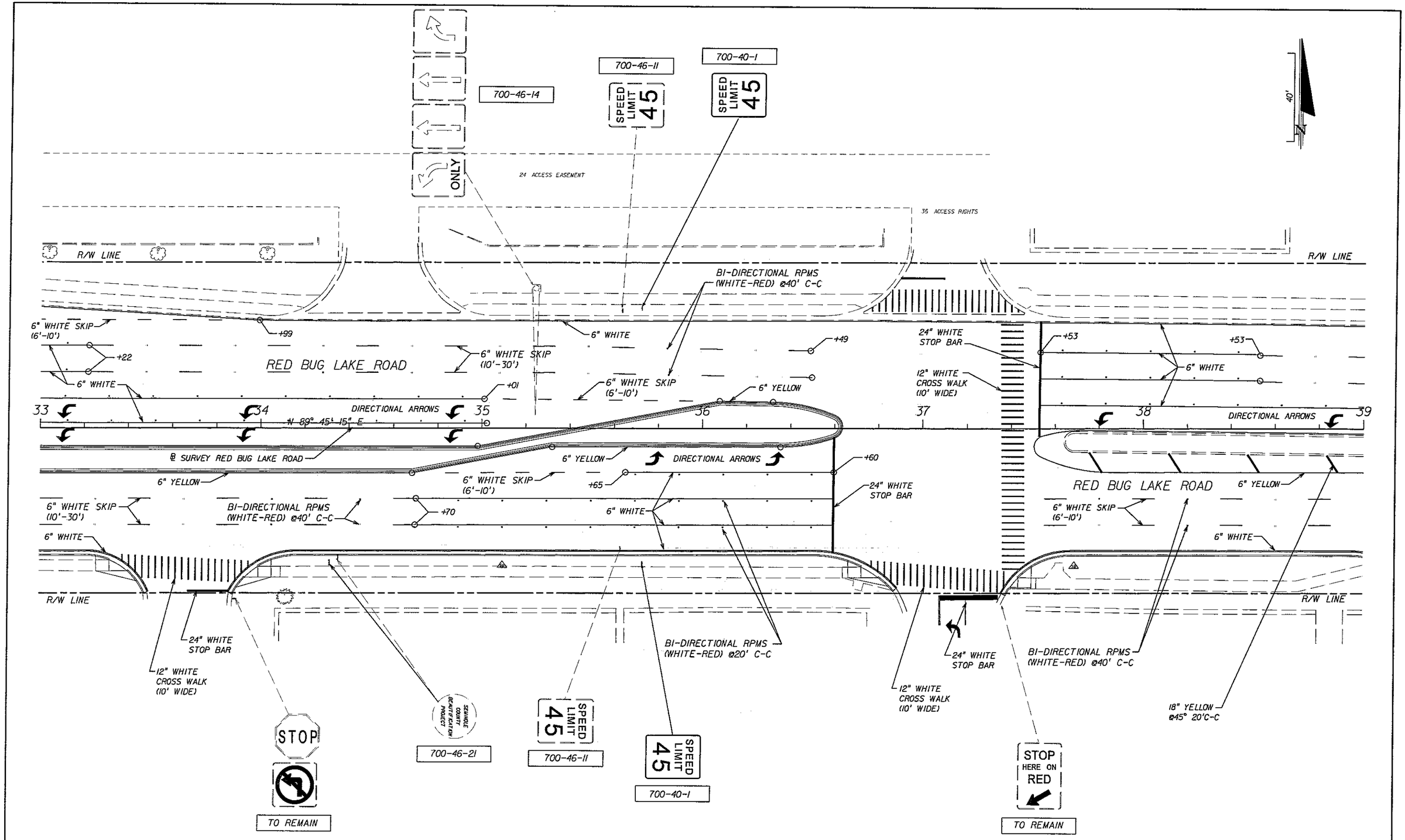

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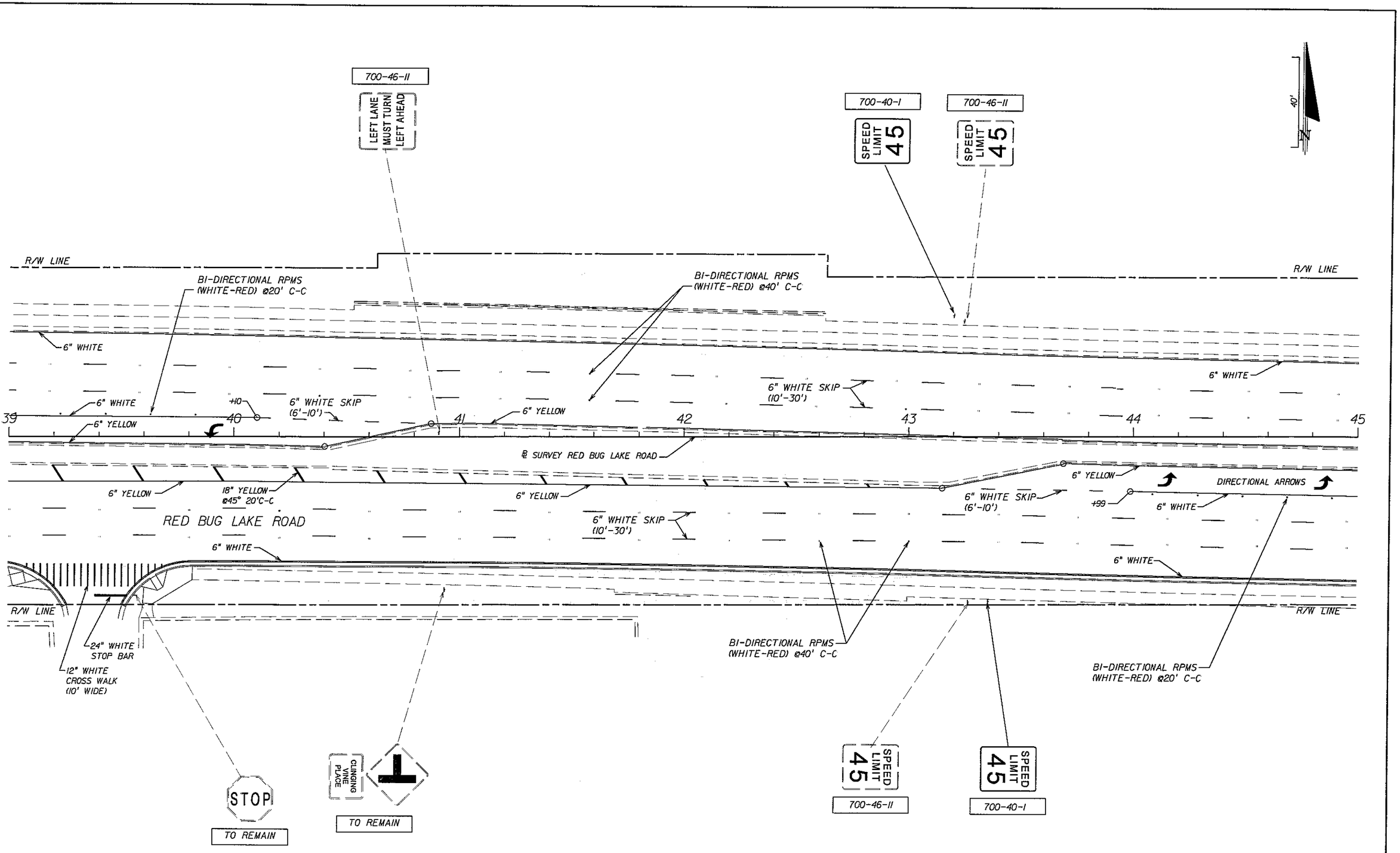
RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS SIGNING AND PAVEMENT MARKINGS

SHEET NO. S-9



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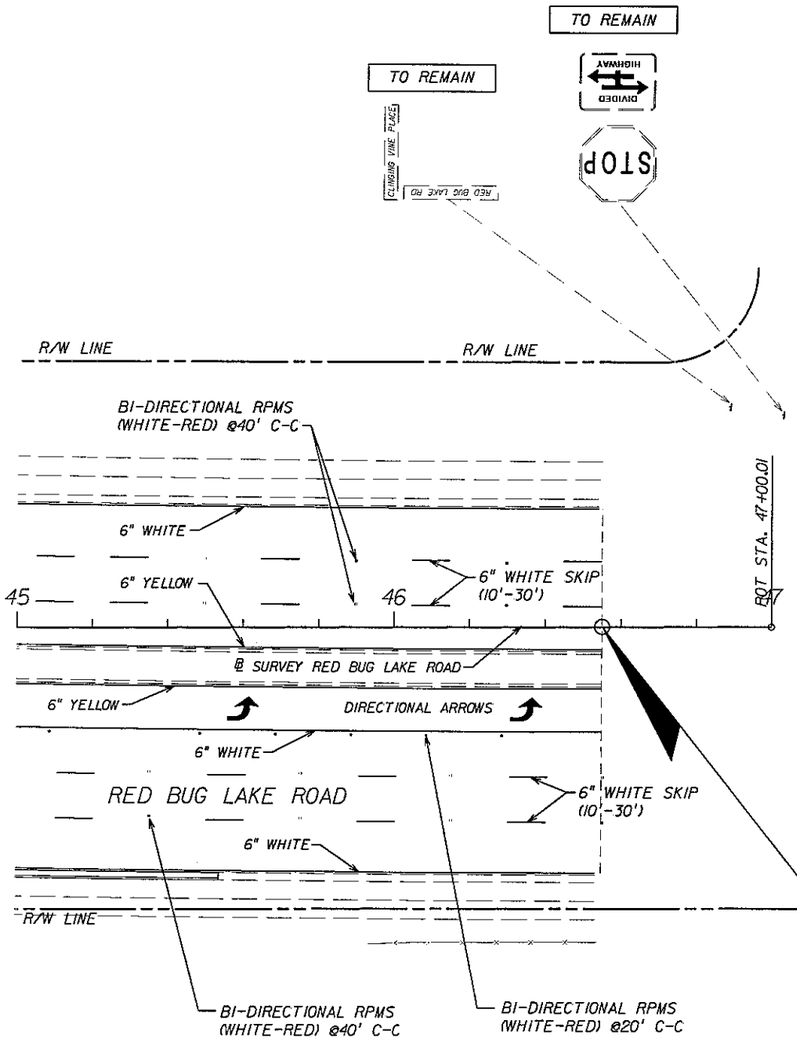
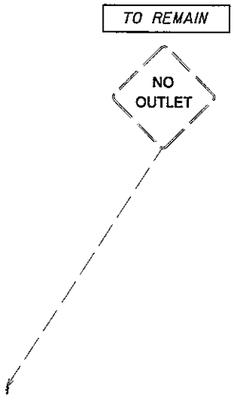
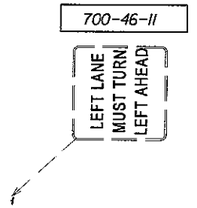
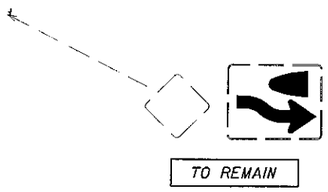
RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS SIGNING AND PAVEMENT MARKINGS

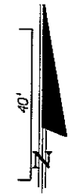
SHEET NO.
S-10











END SIGNING AND PAVEMENT MARKINGS
RED BUG LAKE ROAD
STATION 46+55.00

REVISIONS		
DATE	BY	DESCRIPTION

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RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS SIGNING AND PAVEMENT MARKINGS

SHEET NO.
S-11

700-40-1

25' EASEMENT FOR INGRESS, EGRESS, & PUBLIC UTILITIES

FOR INGRESS, EGRESS, & PUBLIC UTILITIES

40'

TO REMAIN

TO TOLL 417

BI-DIRECTIONAL RPMS (WHITE-RED) @20' C-C

BI-DIRECTIONAL RPMS (WHITE-RED) @40' C-C

R/W LINE

R/W LINE

+45

DIRECTIONAL ARROWS

+11

6" WHITE

6" WHITE

+02

+37

6" WHITE

6" WHITE SKIP (6'-10')

6" WHITE SKIP (6'-10')

TUSKAWILLA ROAD

6" DBL YELLOW

18" YELLOW @45° 20'C-C

+40

6" WHITE SKIP (6'-10')

+25

+75

152

ONLY

153

ONLY

154

ONLY

155

ONLY

156

ONLY

+77

157

POT STA. 158+00.00

DIRECTIONAL ARROWS

6" YELLOW

+29

+74

6" YELLOW

@ SURVEY TUSKAWILLA ROAD

+65

6" WHITE SKIP (6'-10')

DIRECTIONAL ARROWS

+50

6" WHITE

+93

TUSKAWILLA ROAD

6" WHITE SKIP (6'-10')

6" WHITE

6" WHITE

MATCHLINE S-8

BI-DIRECTIONAL RPMS (WHITE-RED) @40' C-C

R/W LINE

R/W LINE

BI-DIRECTIONAL RPMS (WHITE-RED) @20' C-C

24' ACCESS EASEMENT

24' ACCESS EASEMENT

700-46-11

SPEED LIMIT 45

TO REMAIN

END SIGNING AND PAVEMENT MARKINGS
TUSKAWILLA ROAD
STATION 158+00.00

REVISIONS		
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SHEET NO.
S-12

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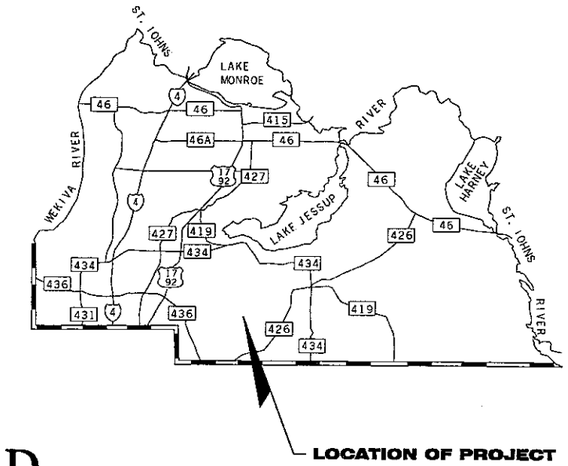

INDEX OF SIGNALIZATION PLANS

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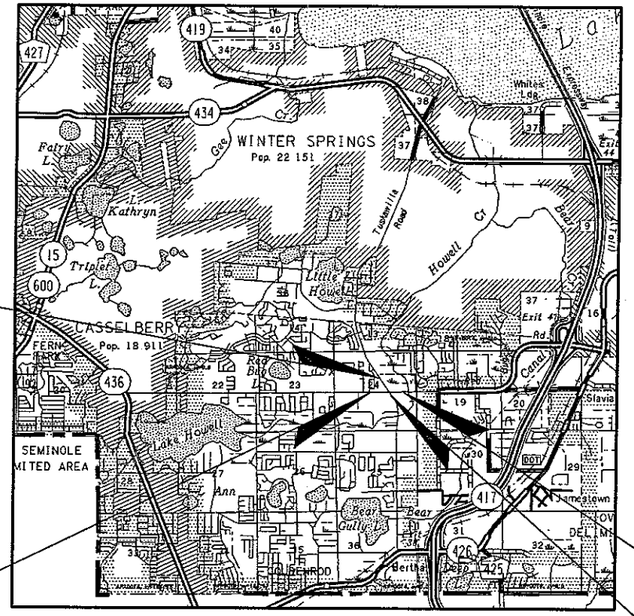
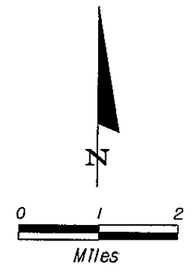
T-2	SUMMARY OF QUANTITIES
T-3	GENERAL NOTES
T-4 - T-6	SIGNALIZATION PLAN SHEETS
T-7 - T-11	MASTARM DETAILS
T-12	SPT BORINGS

INTERSECTION IMPROVEMENTS
RED BUG LAKE ROAD AND TUSKAWILLA ROAD
SIGNALIZATION PLANS





PROJECT LENGTH IS BASED ON ℄ CONSTRUCTION

LENGTH OF PROJECT	LINEAR FEET	MILES
ROADWAY	4205	0 796
BRIDGES	0	0
NET LENGTH OF PROJECT	4205	0.796
EXCEPTIONS	0	0
GROSS LENGTH OF PROJECT	4205	0.796

SEMINOLE COUNTY PROJECT MANAGER: BRETT W. BLACKADAR, P.E.

GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION,
DESIGN STANDARDS DATED JANUARY 2004,
AND STANDARD SPECIFICATIONS FOR ROAD
AND BRIDGE CONSTRUCTION DATED 2004,
AS AMENDED BY CONTRACT DOCUMENTS

KEY SHEET REVISIONS		
DATE	BY	DESCRIPTION

ROADWAY PLANS
ENGINEER OF RECORD:

FURSAN S. MUNJED, P.E.
PROFESSIONAL ENGINEERING CONSULTANTS, INC.
200 EAST ROBINSON STREET SUITE 1560
ORLANDO, FLORIDA 32801

PLANS PREPARED BY:

PEC

PROFESSIONAL ENGINEERING CONSULTANTS, INC
200 EAST ROBINSON STREET SUITE 1560
ORLANDO, FLORIDA 32801

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

60% SUBMITTAL
JULY 15, 2005

ROADWAY PLANS
ENGINEER OF RECORD: FURSAN S. MUNJED, P.E.
DATE:
P.E NO: 51446

SHEET NO.
T-1

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TABULATION OF QUANTITIES

BID ITEM NO.	DESCRIPTION	UNIT	SHEET NUMBERS T-4 ORIG.	T-4 FINAL	ORIG.	FINAL	ORIG.	FINAL	ORIG.	FINAL	ORIG.	FINAL	ORIG.	FINAL	ORIG.	FINAL	ORIG.	FINAL	SUB TOTAL ORIG.	SUB TOTAL FINAL	GRAND TOTAL ORIG.	GRAND TOTAL FINAL
630-1-12	CONDUIT (FURNISH & INSTALL) (UNDERGROUND)	LF																				
630-1-14	CONDUIT (FURNISH & INSTALL) (JACK & BORE)	LF																				
632-7-1	CABLE (SIGNAL) (FURNISH & INSTALL)	PI																				
635-1-11	PULL AND JUNCTION BOXES (F&I)	EA																				
639-1-22	ELECTRICAL POWER SERVICE (UNDERGROUND)	AS																				
639-2-1	ELECTRICAL SERVICE WIRE	LF																				
649-99	MAST ARM SIGNAL STRUCTURE	AS																				
650-51-311	TRAFFIC SIGNAL 12" STANDARD (F&I) (3 SECTION, 1 WAY)	AS																				
653-181	PEDESTRIAN SIGNAL (F&I) (1 WAY)	AS																				
653-182	PEDESTRIAN SIGNAL (F&I) (2 WAY)	AS																				
659-108	SIGNAL HEAD AUXILIARIES (F&I) (STEEL PEDESTAL)	EA																				
659-109	SIGNAL HEAD AUXILIARIES (F&I) (CONCRETE PEDESTAL TYPE II)	EA																				
660-1-101	INDUCTIVE LOOP DETECTOR (F&I) (TYPE 1, 1 CH, R, S)	EA																				
660-1-102	INDUCTIVE LOOP DETECTOR (F&I) (TYPE 2, 1 CH, R, S, TD)	EA																				
660-2-102	LOOP ASSEMBLY (F&I) (TYPE B)	AS																				
660-2-106	LOOP ASSEMBLY (F&I) (TYPE F) (6' X 40')	AS																				
665-11	PEDESTRIAN DETECTOR (F&IXPOLE/CONTROL CABINET MOUNTED)	EA																				
670-5-112	TRAFFIC CONTROLLER ASSEMBLY (F&I) (NEMA) (2 PREEMPTION PLANS)	AS																				
690-10	REMOVE TRAFFIC SIGNAL HEAD ASSEMBLY	EA																				
690-20	REMOVE PEDESTRIAN SIGNAL ASSEMBLY	EA																				
690-31	REMOVE SIGNAL PEDESTAL	EA																				
690-32-1	POLE REMOVAL (SHALLOW) (DIRECT BURIAL)	EA																				
690-50	REMOVE CONTROLLER ASSEMBLY	EA																				
690-80	REMOVE SPAN WIRE ASSEMBLY	EA																				
690-90	REMOVE CABLING AND CONDUIT	PI																				
690-100	REMOVE MISCELLANEOUS SIGNAL EQUIPMENT	PI																				
699-1-1	INTERNALLY ILLUMINATED SIGN (STREET NAME)	EA																				

REVISIONS DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FURSAN S. MUNIED, P.E.
PROFESSIONAL ENGINEER CERTIFICATE NO 51446
PROFESSIONAL ENGINEERING CONSULTANTS, INC
200 EAST ROBINSON STREET SUITE 1560
ORLANDO, FLORIDA 32801
CERTIFICATE OF AUTHORIZATION NO. 3556

SEMINOLE COUNTY
FLORIDA'S NATURAL CHOICE

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, INC.
engineers planners surveyors

RED BUG LAKE ROAD AND TUSKAWILLA ROAD
INTERSECTION IMPROVEMENTS
TABULATION OF QUANTITIES

SHEET NO.
T-2

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GENERAL NOTES

1. FOR ADDITIONAL DETAILS OF TRAFFIC SIGNAL INSTALLATIONS FOR THIS PROJECT SEE FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS, DATED 2004.
2. THE CONTRACTOR SHALL CONTACT SEMINOLE COUNTY TRAFFIC ENGINEER PRIOR TO, BEGINNING ANY WORK IN THE INTERSECTION @ (407) 665-5677.
   EXISTING EQUIPMENT OWNER: SEMINOLE COUNTY
   MAINTAINING AGENCY: SEMINOLE COUNTY
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES PRIOR TO CONSTRUCTION.
4. THESE PLANS REFLECT CONDITIONS KNOWN DURING PLAN DEVELOPMENT. IN THE EVENT ACTUAL PHYSICAL CONDITIONS PREVENT THE APPLICATION OR THE PROGRESSION OF ANY WORK SPECIFIED IN THESE PLANS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY AND PRIOR TO ANY FURTHER WORK ACTIVITY.
5. WHENEVER SIGNAL WORK IS BEING PERFORMED AT AN INTERSECTION (INSTALLING CONDUIT IN THE STREET, REMOVING EXISTING SIGNAL EQUIPMENT, INSTALLING NEW SIGNAL EQUIPMENT, INSTALLING LOOPS AND RUNS, AND TURNING ON NEW SIGNALS) WHERE A LANE IS CLOSED AN OFF-DUTY LAW ENFORCEMENT OFFICER SHALL DIRECT TRAFFIC. THE COST OF THE OFF-DUTY LAW ENFORCEMENT OFFICER SHALL BE INCIDENTAL TO THE WORK AND WILL NOT BE PAID SEPARATELY.
6. DURING NON-WORKING HOURS, NO EQUIPMENT, VEHICLES OR MATERIAL SHALL BE PARKED OR STORED WITHIN 30 FEET OF THE ROADWAY CARRYING TRAFFIC. IF THE ABOVE IS NOT POSSIBLE, A STORAGE AREA WITH PROPER DELINEATION AND ADVANCED WARNING SHALL BE USED WITH THE APPROVAL OF THE ENGINEER.
7. THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE UTILITY DEPARTMENT AT LEAST 48 HOURS IN ADVANCE OF POLE SETTING OPERATIONS WHERE A CONFLICT WITH OVERHEAD ELECTRICAL CONDUCTORS IS EXPECTED AND IN ALL CASES WHERE JOINT USE POLES ARE TO BE USED.
8. AT THE TIME OF FINAL PROJECT INSPECTION THE CONTRACTOR SHALL FURNISH SEMINOLE COUNTY ONE COMPLETE SET OF AS-BUILT PLANS.
9. THE CONTRACTOR SHALL HAVE AN IMSA LEVEL II CERTIFIED SIGNAL TECHNICIAN ON CALL WITHIN A MAXIMUM OF TWO HOURS RESPONSE TIME.
10. THE CONTRACTOR SHALL NOTIFY SEMINOLE COUNTY TRAFFIC ENGINEER (407-665-5677) AT LEAST 24 HOURS IN ADVANCE OF DESTROYING EXISTING ROADWAY SENSORS. AT NO TIME IS THE CONTRACTOR TO CHANGE ANY SIGNAL TIMING. SEMINOLE COUNTY WILL MAINTAIN ALL SIGNALS TMINGS BEFORE, DURING AND AFTER.
11. IT SHOULD BE NOTED THAT NO TEST BORINGS WERE MADE WHERE CONDUIT RUNS ARE TO BE INSTALLED BY JACKING OR TRENCHING. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO EXAMINE JOB SITE CONDITIONS BEFORE SUBMITTING BID PROPOSALS IN ACCORDANCE WITH SECTION 2-4 OF THE FDOT SPECIFICATIONS.
12. AS DIRECTED BY THE PROJECT ENGINEER, THE CONTRACTOR SHALL ADJUST CONDUIT VERTICALLY TO AVOID ANY POSSIBLE CONFLICTS WITH UNDERGROUND UTILITIES.
13. ALL CONDUITS TO BE INSTALLED UNDER PAVEMENT OR SIDEWALK SHALL BE INSTALLED PRIOR TO THE INSTALLATION OF THE BASE COURSE.
14. ALL CONDUIT SHALL BE SCHEDULE 40, 2 INCH DIA. MINIMUM UNLESS OTHERWISE SPECIFIED IN PLANS, EXCEPT ELECTRICAL POWER SERVICE DUCT.
15. THE CONTRACTOR SHALL INSTALL A CONDUIT STUB WITH CAP A MINIMUM OF 12 INCHES OUTSIDE THE POLE FOOTING COMPLETE WITH SWEEP UP INTO THE POLE, IN EACH CONDUIT ENTRANCE IN THE POLE. THE FOOTING, TOP OF SIDEWALK, SIDE OF POLE, ETC. SHALL BE MARKED WITH AN APPROPRIATE ETCHED "X" IN ORDER THAT IT MAY BE READILY LOCATED FOR FUTURE USE.
16. ALL ENDS OF CONDUITS IN PULL BOXES AND CABINETS SHALL BE SEALED WITH ELECTRICAL PUTTY AFTER WIRING IS COMPLETE.
17. TWO SPARE CABINET CONDUITS SHALL BE STUBBED AND CAPPED IN THE NEAREST PULL BOX.
18. PULL BOXES SHALL BE PLACED BEHIND CURB AND GUTTER. IF THERE IS NO CURB AND GUTTER, THEN PULL BOXES SHALL BE PLACED AT LEAST 10 FEET (2.1 METERS) FROM THE EDGE OF PAVEMENT.
19. UNDER NO CIRCUMSTANCES SHALL ENERGIZED CABLE BE PLACED IN THE SAME CONDUIT OR PULL BOX AS LOOP LEAD-IN CABLE.
20. ALL CABLE SHALL BE PULLED IN THE CONDUIT WITH A CABLE GRIP DESIGNED TO PROVIDE A FIRM HOLD ON THE EXTERIOR COVERING OF THE CABLE. A WINCH WITH A SLIP CLUTCH SHALL BE USED TO INSURE THAT THE ALLOWABLE TENSION UNIT IS NOT EXCEEDED. AN APPROVED LUBRICANT SHALL BE USED TO FACILITATE THE PULLING OF THE CABLE.
21. THE CONTRACTOR SHALL VERIFY COLOR CODES FOR BOTH SIGNAL AND INTERCONNECT CABLE WITH SEMINOLE COUNTY BEFORE ORDERING. WIRING DIAGRAMS SHALL BE IN ACCORDANCE WITH SEMINOLE COUNTY SPECIFICATIONS.
22. ALL FIELD WIRING SHALL BE NEATLY BUNDLED AND CLEARLY IDENTIFIED WITH PERMANENT LEGIBLE, WEATHERPROOF TAGS THAT ARE SECURELY ATTACHED TO EACH CABLE. THE TAGGING SYSTEM PROPOSED SHALL BE SUBMITTED FOR APPROVAL WITH THE OTHER EQUIPMENT SUBMITTALS REQUIRED FOR THIS PROJECT.
23. FIBER OPTIC INTERCONNECT CABLE SHALL BE 72SM/16MM UNLESS SPECIFIED OTHERWISE. A COPPER TRACE/PULL WIRE SHALL BE INCLUDED WITH FIBER OPTIC CABLE INSTALLED IN UNDERGROUND CONDUIT.
24. THREE SPARE WIRES ARE REQUIRED PER SIGNAL CABLE. SPARES SHALL BE BOUND AND GROUNDED IN CABINET.
25. GROUND MOUNTED CONTROLLER CABINETS SHALL BE TYPE 5 MINIMUM, UNLESS OTHERWISE SPECIFIED IN THE PLANS.
26. THE CONTROLLER BASE AND SERVICE PAD SHALL BE A MONOLITHIC CONCRETE POUR WITH 4 INCHES MINIMUM / 8 INCHES MAXIMUM ABOVE FINISHED GRADE.
27. THE CABINET DOOR SHALL OPEN AWAY FROM THE INTERSECTION.
28. CONTROLLERS SHALL BE NAZTEC TS2 TYPE 1 AND COMPATIBLE WITH SEMINOLE COUNTY'S SIGNAL SYSTEM. ALL CABINETS SHALL BE 8 PHASE SOP 10, 16 POSITION GOOD BAY, 16 DETECTOR HARNESSES
29. A MANUAL PUSH CORD SHALL BE FURNISHED PER FDOT SPECIFICATION 676-3.3.
30. UNLESS SPECIFIED OTHERWISE, DURING TRAFFIC SIGNAL FLASHING OPERATION THE RED ARROW INDICATION OF ALL 3-SECTION LEFT TURN HEADS SHALL FLASH.
31. NO POLYCARBONATE HOUSING OR MOUNTING HARDWARE WILL BE PERMITTED FOR VEHICULAR OR PEDESTRIAN SIGNAL HEAD ASSEMBLIES. ALL SIGNAL HEADS SHALL BE BLACK ALUMINUM.
32. ALL SIGNAL ASSEMBLIES SHALL HAVE A VERTICAL CLEARANCE OF 17.5 FEET MINIMUM AND 19 FEET MAXIMUM FROM THE BOTTOM OF THE ASSEMBLY TO THE ROAD.
33. THE USE OF "JONES" PLUGS FOR SIGNAL INSTALLATIONS SHALL BE PROHIBITED.
34. ALL DISPLAYS SHALL BE LED.
35. EXISTING SIGNALIZATION SHALL REMAIN IN PLACE TO THE EXTENT POSSIBLE AND SHALL BE USED FOR THE MAINTENANCE OF TRAFFIC AS REQUIRED. THE MAINTENANCE OF EXISTING SIGNALS, UNTIL REMOVED, SHALL REMAIN THE RESPONSIBILITY OF THE CONTRACTOR.
36. ANY EXISTING LOOPS DAMAGED DURING CONSTRUCTION SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST. TEMPORARY DETECTION WILL BE REQUIRED WHENEVER REPAIRS CANNOT BE MADE IN A TIMELY FASHION.
37. LANE CLOSURE WILL BE PERMITTED ONLY DURING ACTIVE WORK PERIODS WHEN THE LANE CLOSURE IS NEEDED TO ACCOMPLISH THE WORK. NO LONG TERM LANE CLOSURES WILL BE PERMITTED. NO LANE CLOSURE WILL BE PERMITTED BETWEEN THE HOURS OF 6:00 AM - 9:00 PM.
38. ALL TYPE F LOOPS SHALL BE 6 FEET WIDE BY 40 FEET LONG AND EXTEND 5 FEET BEYOND THE STOP BAR UNLESS OTHERWISE NOTED IN THE PLANS.
39. ALL DETECTOR LOOPS OR SYSTEM SENSORS SHALL BE CUT ONTO THE ASPHALTIC CONCRETE STRUCTURAL COURSE WHENEVER POSSIBLE. ALL LOOP LEAD-IN CABLES SHALL BE PLACED IN CONDUIT. LOOP LEAD-IN CABLE SHALL NOT EXIT THE ROADWAY WITHIN THE CORNER RADIUS AT AN INTERSECTION.
40. EACH LOOP SHALL BE TREATED AS AN INDIVIDUAL LOOP WITH SEPARATE LEAD-INS FROM SPLICE POINT TO CABINET TERMINAL.
41. SHIELDED WIRING SHALL BE USED FOR ALL LOOP LEAD-IN CABLE FROM THE LOOP SPLICE TO THE CABINET TERMINAL.
42. THE CONTRACTOR SHALL USE BELDON TYPE 9438 ROADWAY LOOP WIRE, OR EQUIVALENT TYPE XHHW HIGH DENSITY CROSSLINKED POLYETHYLENE INSULATED WIRE RATED 600 VOLTS.
43. SECTION 660-2.3 OF THE FDOT SPECIFICATIONS IS MODIFIED TO REQUIRE THAT ALL SAWCUTS FOR LOOP INSTALLATION SHALL BE CLEARED OF DUST, DIRT AND OTHER DEBRIS WITH A VACUUM CLEANER PRIOR TO THE INSTALLATION OF LOOP WIRE OR LEAD-IN CABLE. ALL SAWCUTS SHALL BE SEALED WITH AN APPROVED FLEXIBLE EPOXY.
44. SECTION 660-2 OF THE FDOT SPECIFICATIONS IS MODIFIED TO PROHIBIT THE USE OF TYPE III STEEP ASPHALT OR COAL TAR BASE CEMENT TO SEAL TRAFFIC DETECTOR LOOPS.
45. SECTION 660-5 OF THE FDOT SPECIFICATIONS IS MODIFIED TO REQUIRE THE INSULATION RESISTANCE OF EACH LOOP TO MEASURE GREATER THAN 100 MEGAOHMS WHEN USING A 500-VOLT INSULATION MEGGER.
46. TUNNEL VISORS SHALL BE USED ON ALL SIGNAL SECTIONS.
47. PUSH BUTTONS SHALL BE CONSTRUCTED WITH MECHANICAL CONTACTS. MICROSWITCHES SHALL NOT BE USED.
48. THE CONTRACTOR SHALL INSTALL AND TEST IN PLACE THE INTERNALLY ILLUMINATED STREET NAME SIGNS. THE SIGNS ARE TO BE BURNED IN FOR 60 DAYS BEFORE FINAL ACCEPTANCE. THE SIGNS SHALL BE BREAKERED SEPARATELY FROM THE SIGNAL CABINET AND SHALL BE CONTROLLED BY ONE MASTER PHOTOCELL.
50. THE CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR ALL MAST ARM POLES INCLUDING FOUNDATION DESIGN TO THE ENGINEER FOR REVIEW AND APPROVAL.
51. NEW SIGNAL LOCATIONS SHALL BE IN FLASH PHASE FOR 14 DAYS.
52. CONTRACTOR IS TO NOTIFY SEMINOLE COUNTY AT LEAST 48 HOURS IN ADVANCE OF ANY CONSTRUCTION.
53. IF THE CONTRACTOR REQUESTS AN INSPECTION FOR CONDITIONAL OR FINAL ACCEPTANCE AND THE CONTRACTOR IS NOT READY FOR THE INSPECTION THEN THE CONTRACTOR WILL BE BACK CHARGED FOR THE CONSULTANT INSPECTOR'S TIME.
54. CONTRACTOR IS TO INSURE THAT A 3.5 FT WIDTH AND LEVEL SIDEWALK IS ADJACENT TO ALL POLES THAT HAVE A PEDESTRIAN DETECTOR TO ALLOW FOR PEDESTRIAN ACCESS.
55. THE CONTRACTOR SHALL NOTIFY ALL UTILITIES AT LEAST 48 HOURS IN ADVANCE OF ANY OPERATION THAT MAY CONFLICT WITH OVERHEAD OR UNDERGROUND UTILITIES.
56. NO BANDING HARDWARE WILL BE ACCEPTED FOR ANY HANGING HARDWARE.
57. PAY ITEM 678-1-13 INCLUDES ALL ALL ITEMS NECESARY FOR A COMPLETE INSTALLATION. THE GENERATOR IS NOT TO BE PROVIDED BY THE CONTRACTOR. THIS WILL BE PROVIDED BY THE COUNTY, AS NEEDED DURING EMERGENCY POWER FAILURES.
58. UTILITY OWNERS:

ELECTRIC - DISTRIBUTION/TRANSMISSION
MR. MIGUEL RODRIGUEZ
PROGRESS ENERGY, DISTRIBUTION
3300 EXCHANGE PL.
LAKE MARY, FL 32746
(407) 942-9358

WATER & SEWER
MS. PATTI LEVITI, SENIOR CIVIL ENGINEERING TECHNICIAN
SEMINOLE COUNTY ENVIRONMENTAL SERVICES
500 WEST LAKE MARY BOULEVARD
SANFORD, FL 32773
(407) 665-2132

S. SEMINOLE N. ORANGE COUNTY WASTEWATER TRANS. AUTHORITY
STEVE MILLER, P.E.
410 LAKE HOWELL RD.
MAITLAND, FL. 32751
(407) 628-3419

SEMINOLE COUNTY TRAFFIC ENGINEERING
GLENN YACUBCHIK
140 BUSH LOOP
SANFORD, FL. 32773
(407) 665-5677

COMMUNICATIONS
MR. RICHARD KENNEDY
SPRINT
952 FIRST STREET, MS-FLATH0101
ALTAMONTE SPRINGS, FL 32701
(407) 830-3428

COMMUNICATIONS
MR. JIM FARRELL
BELL SOUTH
450 NORTH GOLDENROD RD.
ORLANDO, FL 32807
(407) 273-5084

CABLE TV
MR. MARVIN USRY
BRIGHT HOUSE NETWORKS
844 MAGUIRE ROAD
OCOEE, FL 34761-2916
(407) 532-8509

GAS & PETROLEUM PRODUCTS
MR. CARLOS QUINTANA
TECO/PEOPLES GAS SYSTEM, INC.
600 WEST ROBINSON STREET
ORLANDO, FL 32801
(407) 420-2675

REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FURSAN S. MUNJED, P.E.
PROFESSIONAL ENGINEER CERTIFICATE NO. 51446
PROFESSIONAL ENGINEERING CONSULTANTS, INC
200 EAST ROBINSON STREET SUITE 1560
ORLANDO, FLORIDA 32801
CERTIFICATE OF AUTHORIZATION NO. 3556

SEMINOLE COUNTY
FLORIDA'S NATURAL CHOICE

PEC
PROFESSIONAL ENGINEERING CONSULTANTS INC.
engineers planners surveyors

RED BUG LAKE ROAD AND TUSKAWILLA ROAD
INTERSECTION IMPROVEMENTS
GENERAL NOTES

SHEET NO.
T-3

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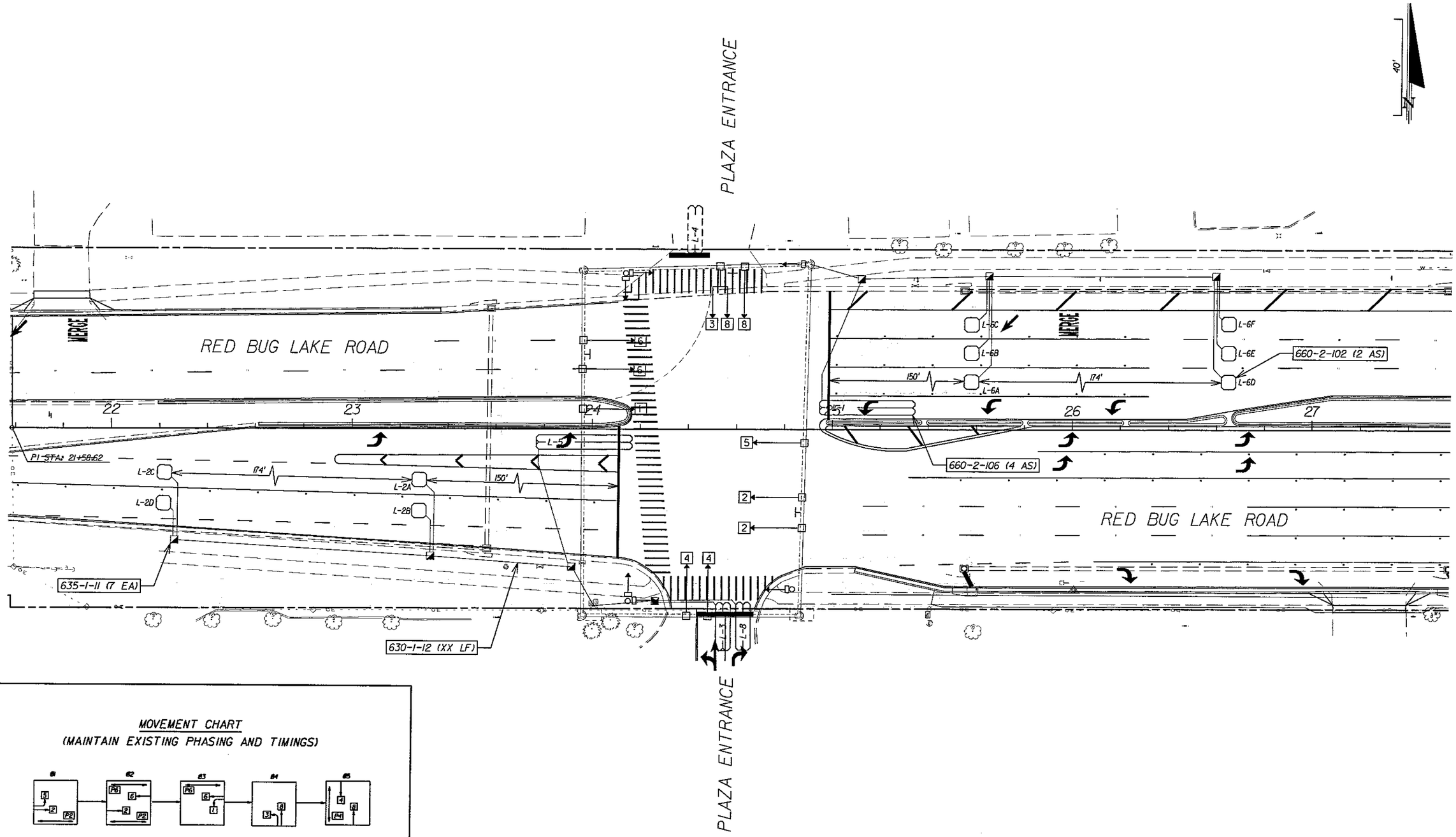

MOVEMENT CHART
(MAINTAIN EXISTING PHASING AND TIMINGS)

REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FURSAN S. MUNJED, P.E.
PROFESSIONAL ENGINEER CERTIFICATE NO. 51446
PROFESSIONAL ENGINEERING CONSULTANTS, INC.
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CERTIFICATE OF AUTHORIZATION NO. 3556

SEMINOLE COUNTY
FLORIDA'S NATURAL CHOICE

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engineers planners surveyors

RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS SIGNALIZATION PLAN (PLAZA ENTRANCE)

SHEET NO.
T-4

SIGNAL HEAD DETAILS

ALL INDICATIONS SHALL BE LED

PED SIGNAL HEAD DETAILS

P8 COUNTDOWN FEATURES

P2 P4
P4 P6
P6 P8

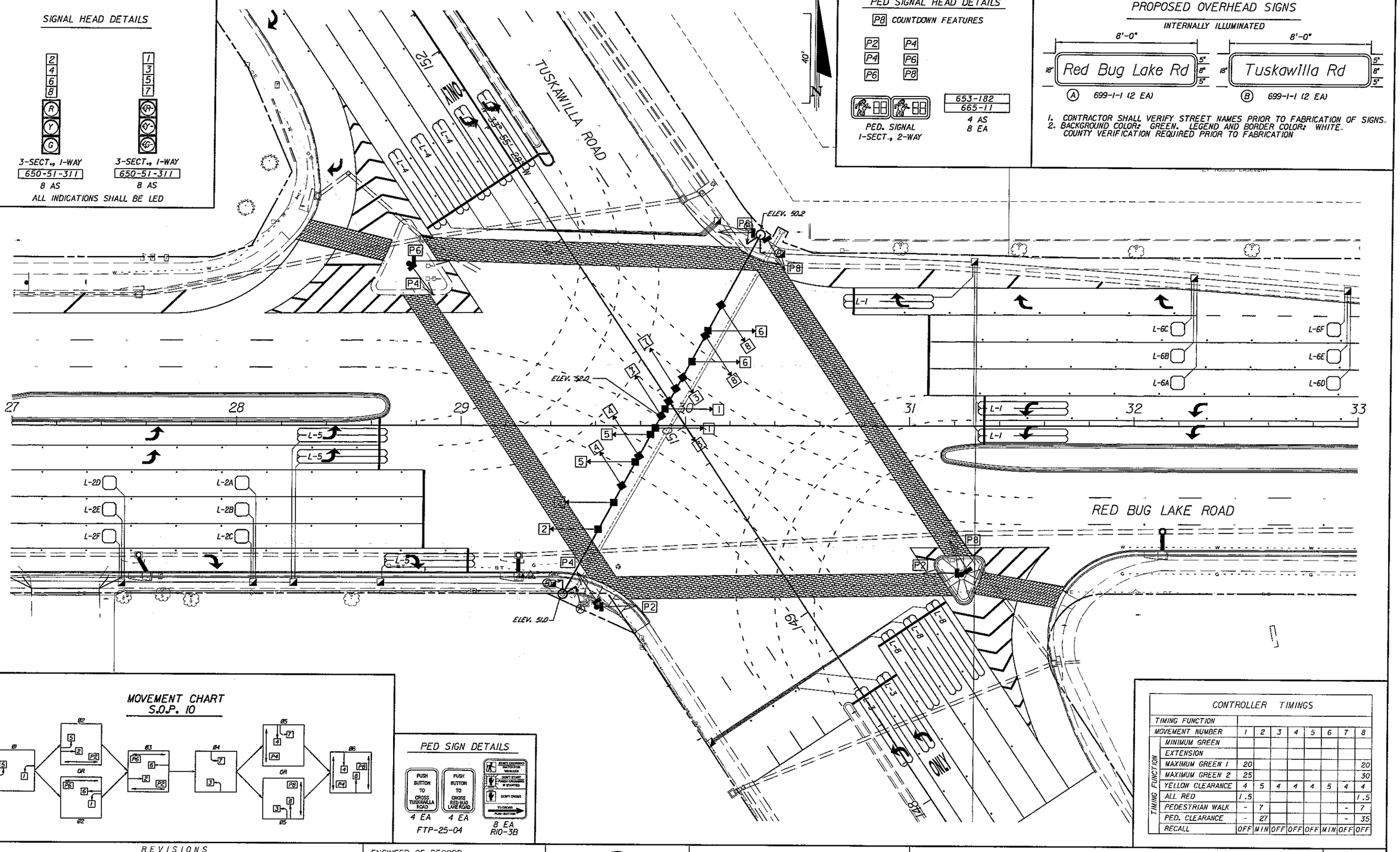
PED. SIGNAL
1-SECT., 2-WAY

653-182
665-11
4 AS
8 EA

PROPOSED OVERHEAD SIGNS

INTERNALLY ILLUMINATED

1. CONTRACTOR SHALL VERIFY STREET NAMES PRIOR TO FABRICATION OF SIGNS.
2. BACKGROUND COLOR: GREEN. LEGEND AND BORDER COLOR: WHITE.
COUNTY VERIFICATION REQUIRED PRIOR TO FABRICATION



MOVEMENT CHART
S.O.P. 10

PED SIGN DETAILS

4 EA 4 EA 8 EA
FTP-25-04 R10-3B

CONTROLLER TIMINGS

TIMING FUNCTION	MOVEMENT NUMBER	1	2	3	4	5	6	7	8
	MINIMUM GREEN								
	EXTENSION								
	MAXIMUM GREEN 1	20							20
	MAXIMUM GREEN 2	25							30
	YELLOW CLEARANCE	4	5	4	4	4	5	4	4
	ALL RED	1.5							1.5
	PEDESTRIAN WALK	-	7					-	7
	PED. CLEARANCE	-	27					-	35
	RECALL	OFF	MIN	OFF	OFF	OFF	MIN	OFF	OFF

TIMING FUNCTION

REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FURSAN S. MUNJED, P.E.
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SEMINOLE COUNTY
FLORIDA'S NATURAL CHOICE

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PROFESSIONAL ENGINEERING CONSULTANTS INC.
engineers planners surveyors

RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS SIGNALIZATION PLAN

SHEET NO.
T-5

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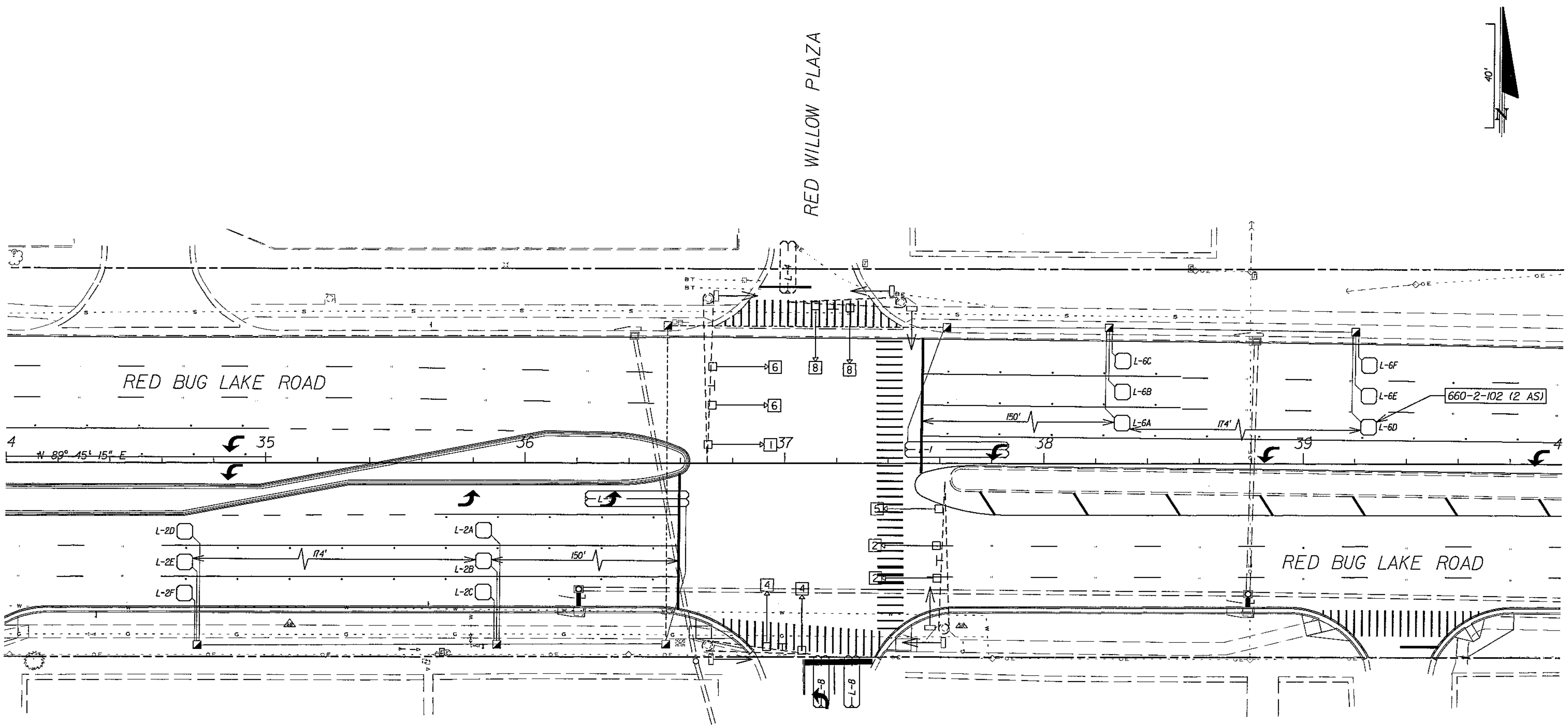
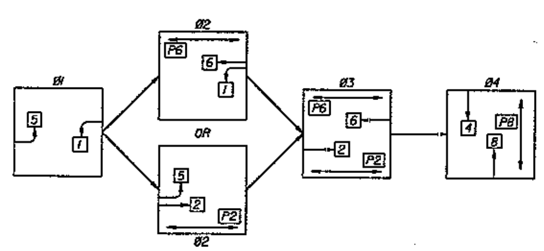


MOVEMENT CHART
S.O.P. 7



SIDESTREET STA. 33+69 (RT)
- CONST. DIRECTIONAL BORE (70 LF) (555-1-1)
- CONST. PULL & JUNCTION BOXES (2 EA) (635-1-11)

REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FURSAN S. MUNJED, P.E.
PROFESSIONAL ENGINEER CERTIFICATE NO. 51446
PROFESSIONAL ENGINEERING CONSULTANTS, INC
200 EAST ROBINSON STREET SUITE 1560
ORLANDO, FLORIDA 32801
CERTIFICATE OF AUTHORIZATION NO 3556

SEMINOLE COUNTY
FLORIDA'S NATURAL CHOICE

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, INC
engineers planners surveyors

RED BUG LAKE ROAD AND TUSKAWILLA ROAD
INTERSECTION IMPROVEMENTS
SIGNALIZATION PLAN (RED WILLOW PLAZA)

SHEET NO.
T-6

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GENERAL NOTES

1) These Standards are intended solely for use by Seminole County, Florida, for mast arm installations in Seminole County.

2) These Standards address only the structural details of the mast arm and the foundation. The user of these Standards remains responsible for verifying that the complete mast arm assembly (structure, foundation, signal heads, and sign panels) meets all of the requirements of the appropriate governing agencies, including, but not limited to, providing adequate vertical and horizontal clearances, adequate sight distance, appropriate signalization and signal placement, and adequate sign panel sizes and positioning.

3) Utilities: Adequate provision must be made for the protection and/or relocation of existing utilities. Users of these standards are cautioned to verify that there will be no interference between the utilities and the mast arm foundation.

4) Construction shall be in accordance with the Florida Department of Transportation "Standard Specifications for Road and Bridge Construction" (Current Edition), except for method of payment.

ATTACHMENT OF ILLUMINATED SIGN

1) The details of the illuminated Sign attachment shall be included with the mast arm shop drawings.

2) The illuminated Signs shall be attached below the arm. The signs shall be attached to the arm using free-swinging mounting brackets. No other attachment position or method is permitted.

3) The brackets shall attach to the arm using metal bands. Fastening to and/or welding to the arm is prohibited.

4) Field drill entry hole in mast arm for cable and fit with rubber grommet.

ATTACHMENT OF TRAFFIC SIGNAL HEADS

1) The details of the Traffic Signal Head attachment shall be included with the mast arm shop drawings.

2) Signal cable shall be completely enclosed in hollow tube(s) and hollow brackets between the arm and the signal head.

3) The brackets shall attach to the arm using metal bands. Fastening to and/or welding to the arm is prohibited.

4) Field-drill entry hole for signal cable in arm and fit with rubber grommet.

STRUCTURE NOTES

1) Signal Structure Materials shall be as follows:

Uprights & Mast Arms	-> ASTM A607 Grade 50, 55 or 60 (less than 1/4") or ASTM A572 Grade 50 or 60 (1/4" and over) or ASTM A595 Grade A or Grade B
Steel Plates	-> ASTM A709 Grade 36
Weld Metal	-> E70XX
Bolts (except Anchor Bolts)	-> ASTM A325 Type I
Anchor Bolts	-> ASTM F1554 Grade 55
Nuts for Anchor Bolts	-> ASTM A563 Grade A, Heavy Hex
Washers for Anchor Bolts	-> ASTM F436 Type I
Handhole Frame	-> ASTM A709 Grade 36
Handhole Cover	-> ASTM A607 Grade 50, 55, or 60
Aluminum Caps and Covers	-> ASTM B26 (356-T6)
Stainless Steel Screws (for caps)	-> AISI Type 316

2) All welding shall conform to American Welding Society Structural Welding Code (Steel) ANSI/AWS D1.1 (current edition)

3) All Steel Items shall be galvanized as follows:

All Nuts, Bolts and Washers	-> ASTM A153 Class C or D depending on size
All other steel items	-> ASTM A123

All steel items shall be painted after galvanizing.

4) The Structure must be assembled after galvanizing and painting and prior to shipment to the site to assure fit up. It may be disassembled for shipping.

5) Shop Drawings for this Structure are required and fabrication shall not begin until these Shop Drawings are approved. Shop Drawings shall include anchor bolt orientation with respect to Mast Arm(s) and the direction of traffic.

6) Except for Anchor Bolts, all bolt hole diameters shall be equal to the bolt diameter plus 1/16", prior to galvanizing. Hole diameters for Anchor Bolts shall not exceed the bolt diameter plus 1/2".

7) Wire access holes for Signals and Signs shall not exceed 1/2" in diameter.

8) The Upright pipe shall be installed vertically. Camber shall be accounted for in the Mast Arm connection as detailed.

9) If the Traffic Signals or Sign Panels are not in place within two working days after the Mast Arm is erected, a 3.0 feet by 2.0 feet (min.) blank Sign Panel shall be attached to the bottom of the Mast Arm within six feet of the Mast Arm tip. This blank Sign Panel shall remain in place until the permanent Signals and Signs are mounted.

10) The Upright tube shall not be erected until the foundation concrete has been allowed to cure for a minimum of seven days.

11) Mast Arms and Upright pipes shall be tapered with the diameter changing at a total rate of 0.14 inches per foot.

STRUCTURAL DESIGN NOTES

1) The design of the mast arm structures shall be in accordance with the American Society of State Highway and Transportation Officials "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals" (1994 edition with revisions through 1998).

2) The Combined Stress Ratio (CSR) shall not exceed 0.90.

3) Design Wind Speed:
   90 mph except for torsion force acting on foundation
   70 mph for torsion force acting on foundation

4) Multiple piles shall not be used.

5) The mast arm structure details shown herein are not complete details. Instead, they indicate the desired appearance of the mast arm structure and the desired connection styles. The fabricator shall be responsible for the complete design and detailing of the mast arm structure. Calculations and shop drawings shall be signed and sealed by a professional engineer registered in the State of Florida.

PAINTING

1) Solvent wipe all galvanized surfaces in accordance with The Society for Protective Coatings (SSPC) SSPC-SP1 and allow to dry.

2) Clean surfaces to achieve a "brush blast" condition as defined by SSPC-SP7.

3) Test galvanized thickness to ensure sufficient galvanizing remains on the substrate to meet specification.

4) Brush prime all pits and imperfections with a polyamide epoxy primer.

5) Apply one full coat, 4.0 to 6.0 mils dry film thickness, of polyamide epoxy primer.

6) Apply one full coat, 2.0 to 3.0 mils dry film thickness, of aliphatic polyurethane finish paint. Submit color samples for approval.

7) All manufacturer recommendations not in conflict with this prodedure shall also apply. The epoxy and polyurethane shall be acquired from the same manufacturer.

8) After coatings have sufficiently cured, wrap components in paper, cardboard or other approved means to prevent damage during shipping and handling.

9) The polyamide epoxy primer and the aliphatic polyurethane finish paint shall be products from the current Florida DOT Qualified Products List (QPL). The color of the epoxy primer shall contrast with the galvanizing and the finish paint.

SUBMITTAL REQUIREMENTS

1) The following information must be provided for every structure:
   Mast Arm Design Calculations & Shop Drawings
   Soil Type Determination Letter (See Foundation Details)

   The mast arm design calculations shall clearly state the foundation reactions. All of the foundation reactions shall be based upon the 90 mph design wind speed except that the torsion force shall be based upon the 70 mph design wind speed.

2) For structures where the existing soil conditions meet the requirements of one of the standard soil types listed (see Foundation Drawings), the foundation details shown shall apply. No separate foundation design is needed.

3) For structures where the existing soil conditions do not meet the requirements of one of the standard soil types listed (see Foundation Drawings), the foundation details shown shall not apply. For these structures, the foundation must be designed and detailed by a professional engineer registered in the State of Florida. Signed and sealed design calculations and foundation details shall be submitted concurrently with the Mast Arm calculations and shop drawings.

REVISIONS		
DATE	BY	DESCRIPTION

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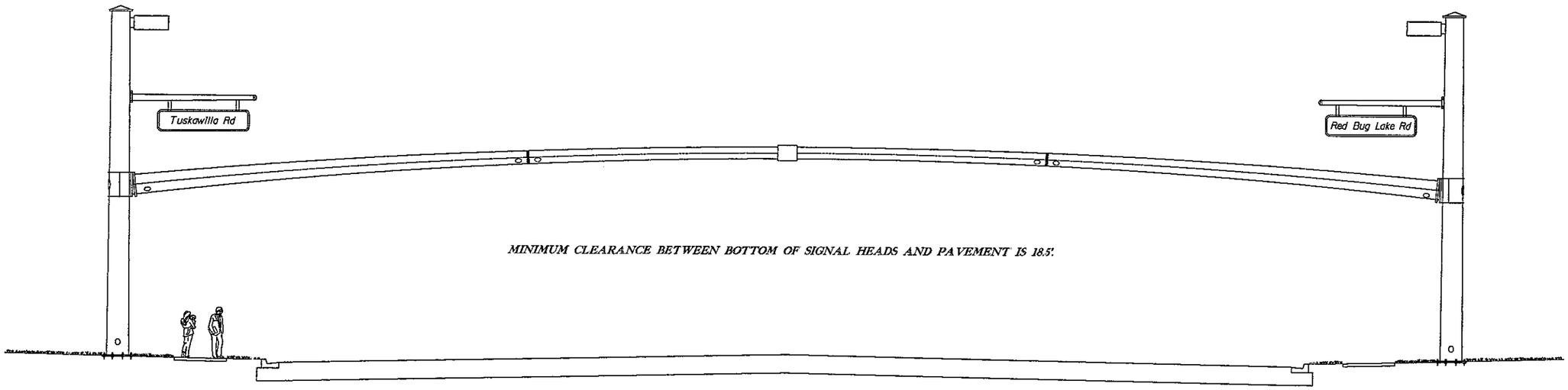
SEMINOLE COUNTY
FLORIDA'S NATURAL CHOICE

PEC
PROFESSIONAL ENGINEERING CONSULTANTS INC.
engineers planners surveyors

RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS
MAST ARM DETAILS

SHEET NO.
T-7



MINIMUM CLEARANCE BETWEEN BOTTOM OF SIGNAL HEADS AND PAVEMENT IS 18.5'.

PRELIMINARY

REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
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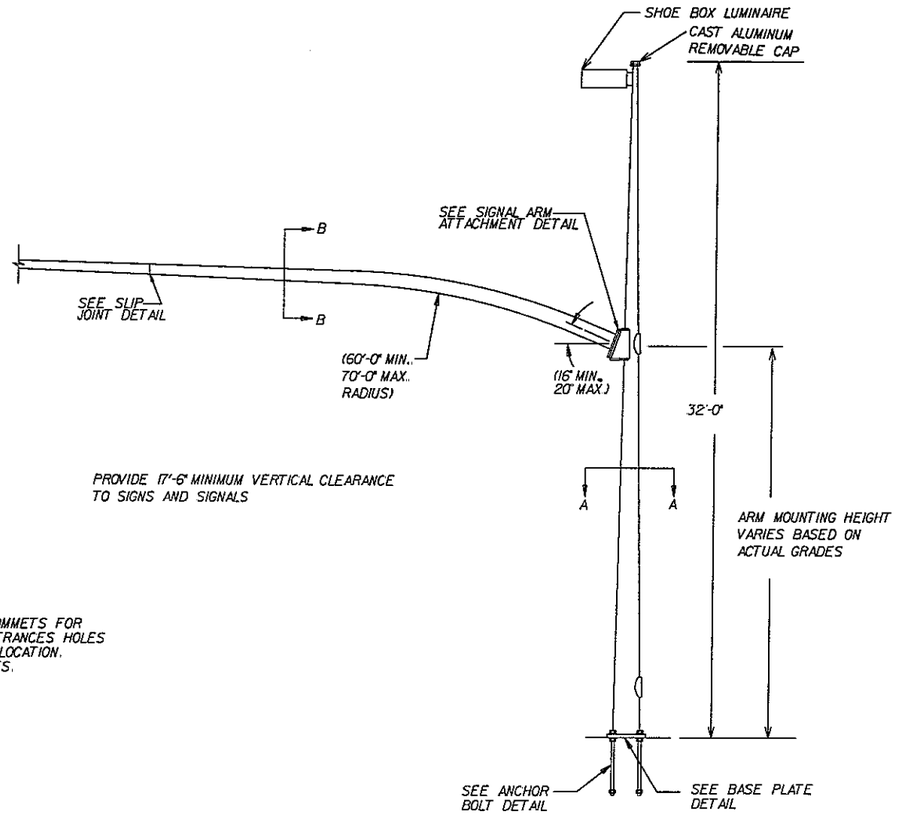
engineers planners surveyors

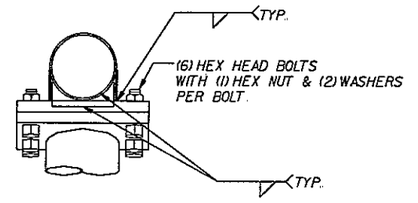
RED BUG LAKE ROAD AND TUSKAWILLA ROAD
INTERSECTION IMPROVEMENTS
MAST ARM DETAILS

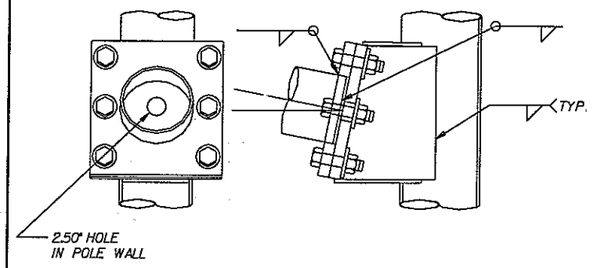
SHEET NO.
T-8



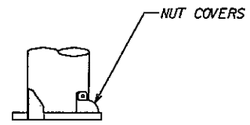
NOTE:
PROVIDE 1" I.D. GROMMETS FOR 1.38" DIA. WIRE ENTRANCES HOLES AT EACH SIGNAL LOCATION. FIELD DRILL HOLES.

ELEVATION

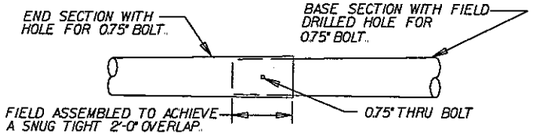




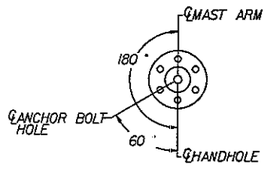
SIGNAL ARM ATTACHMENT



NUT COVERS

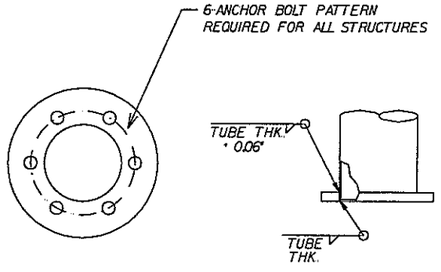


SIGNAL ARM SLIP JOINT

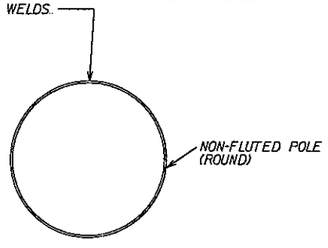


ALL ANGLES MEASURED CLOCKWISE FROM HAND-HOLE AS VIEWED FROM SMALL END OF POLE

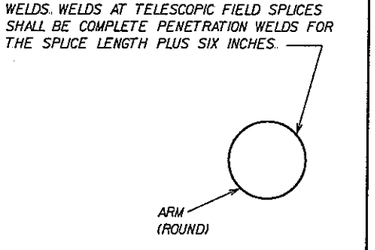
6-BOLT RADIAL INDEX



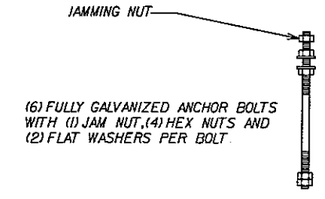
BASE PLATE



SECTION A-A



SECTION B-B



NOTE: "J-BOLTS" ARE NOT PERMITTED

ANCHOR BOLT

REVISIONS		
DATE	BY	DESCRIPTION

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RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS
MAST ARM DETAILS

SHEET NO.
T-9

FOUNDATION CONSTRUCTION NOTES

1) Natural slurry shall not be relied upon to prevent caving of soils and maintaining an open hole. Otherwise, drilled shafts shall be constructed in accordance with Section 455.

2) The Contractor shall be prepared to use temporary casing or other methods as needed to control artesian water levels.

FOUNDATION MATERIALS

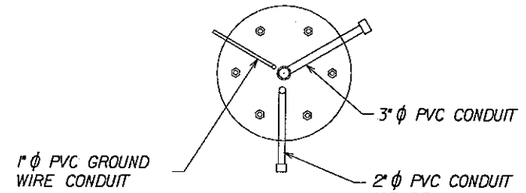
1) Reinforcing Steel shall be ASTM A615, Grade 60.

2) Concrete shall be FDOT Class IV (Drilled Shaft) with a minimum 28-day compressive strength of 4000 psi.

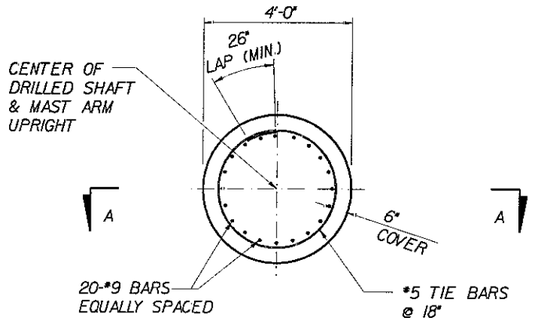
3) Grout shall have a minimum 28-day compressive strength of 5000 psi and shall meet the requirements of FDOT Specification Section 934.

4) For all FDOT District 5 submittals, contact FDOT District 5 Geotechnical Department for environmental classification based on the FDOT District 5 Corrosion Maps.

NOTE:
ORIENT ALL CONDUIT AS REQUIRED TO AVOID BOLT CIRCLE

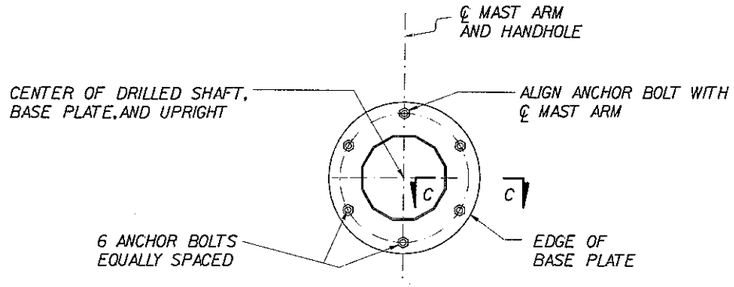


PLAN



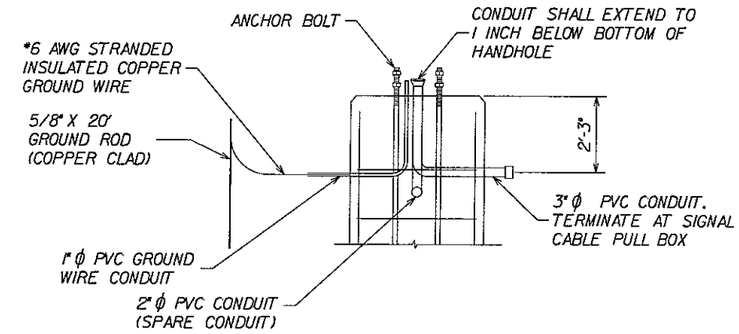
FOUNDATION PLAN

NOTE: 6" MIN COVER ON SHAFT REINFORCEMENT



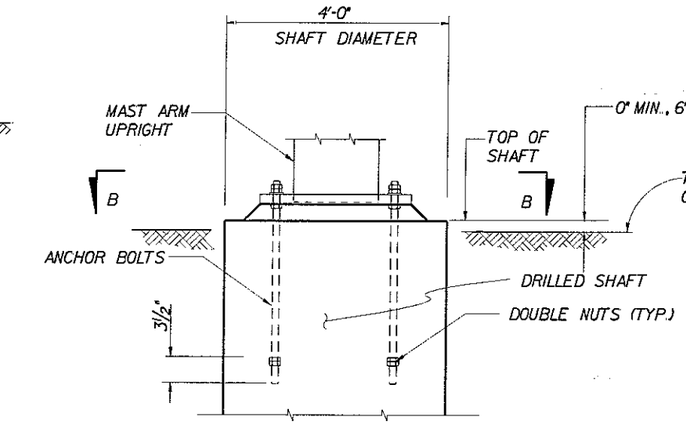
SECTION B-B

NOTE: CONCRETE AND REINFORCEMENT NOT SHOWN

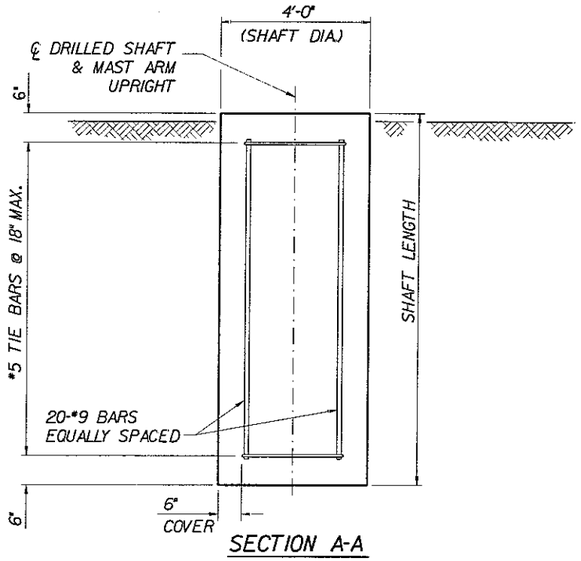


ELEVATION

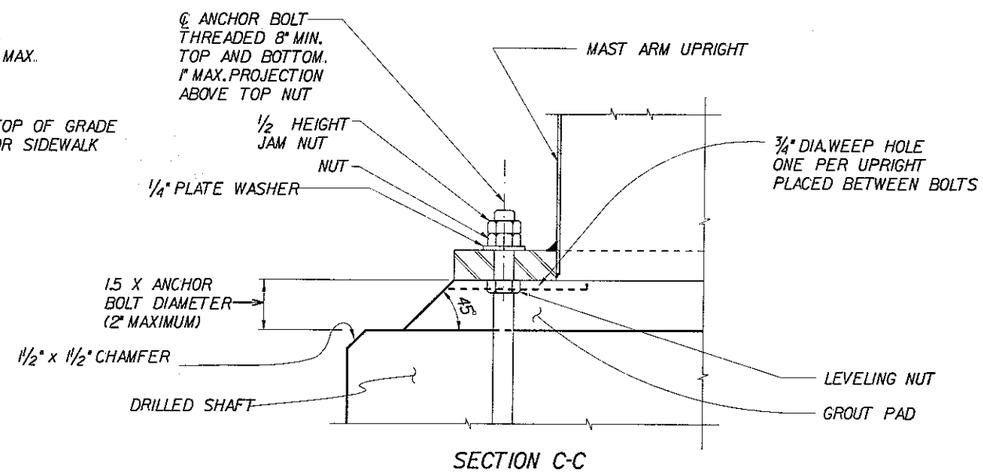
FOUNDATION CONDUIT DETAIL



BASE PLATE AND ANCHORAGE ELEVATION



SECTION A-A



SECTION C-C

REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
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CERTIFICATE OF AUTHORIZATION NO. 3556

SEMINOLE COUNTY
FLORIDA'S NATURAL CHOICE

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PROFESSIONAL ENGINEERING CONSULTANTS, INC.
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RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS
FOUNDATION DETAILS

SHEET NO.
T-10

GENERAL FOUNDATION NOTES

1) The foundation information and details shown are for foundations that were designed using specific soil properties including internal angle of friction, average effective soil unit weight, and the coefficient of friction between soil and foundation.

2) The information provided in the Table of Foundation Capacities is only valid if all of the following conditions are met:

   A. The existing soil conditions meet all of the parameters listed for the standard soil type (see Clay Layer Notes this sheet for exception).

   B. The ground surface slope is 4H:1V or flatter.

   C. The foundations are constructed in accordance with these standards.

   If any of these conditions are not met, then the foundation information and details shown herein do not apply and the foundation must be designed by a professional engineer registered in the State of Florida.

3) A Soil Type Determination Letter must be provided for each mast arm structure. The Soil Type Determination Letter shall state which of the Soil Classifications shown (Soil Type S-1 through Soil Type S-12) reflects the prevailing conditions at the mast arm location. The Soil Type Determination Letter shall be prepared and signed and sealed by a professional engineer registered in the State of Florida.

4) Foundation Design is based upon the following:

Factor of Safety Against Overturning:	2.0
Factor of Safety Against Torsion:	1.0
Coefficient of Friction between soil & shaft:	0.45
Horizontal Shear (applied at top of shaft):	6.0 kips

5) See Sheet 2 of 13 for additional notes.

CLAY LAYER NOTE

At the discretion of the Geotechnical Engineer, the following procedure may be used for soil profiles meeting the parameters of one of the soil types listed herein except for having a single clay layer less than 3 feet thick:

1. The shaft capacities shall be based upon the soil type and foundation length shown in the Table of Foundation Capacities.

2. The constructed shaft length shall be increased 3 feet beyond the length shown in the Table of Foundation Capacities.

This procedure shall not be used if the clay layer is at the bottom of the shaft.

TABLE OF FOUNDATION CAPACITIES

SOIL	SHAFT LENGTH (FEET)	TORSION CAPACITY (KIP*FEET)	MOMENT CAPACITY (KIP*FEET)
SOIL TYPE S-1 Ø = 28 DEGREES AVERAGE EFFECTIVE SOIL UNIT WEIGHT = 60 PCF	10	19	61
	12	27	149
	14	37	281
	16	48	465
	18	60	708
	20	73	1020
	22	88	1407
	24	104	1878
SOIL TYPE S-2 Ø = 28 DEGREES AVERAGE EFFECTIVE SOIL UNIT WEIGHT = 75 PCF	10	24	91
	12	34	204
	14	46	372
	16	59	605
	18	74	913
	20	91	1305
	22	109	1792
SOIL TYPE S-3 Ø = 28 DEGREES AVERAGE EFFECTIVE SOIL UNIT WEIGHT = 90 PCF	10	29	122
	12	41	260
	14	55	464
	16	71	745
	18	89	1117
	20	109	1590
SOIL TYPE S-4 Ø = 28 DEGREES AVERAGE EFFECTIVE SOIL UNIT WEIGHT = 105 PCF	10	34	152
	12	48	315
	14	64	555
	16	83	886
	18	104	1321
	20	128	1875
SOIL TYPE S-5 Ø = 30 DEGREES AVERAGE EFFECTIVE SOIL UNIT WEIGHT = 60 PCF	10	19	71
	12	27	168
	14	37	311
	16	48	512
	18	60	776
	20	73	1115
	22	88	1535
	24	104	2046
SOIL TYPE S-6 Ø = 30 DEGREES AVERAGE EFFECTIVE SOIL UNIT WEIGHT = 75 PCF	10	24	104
	12	34	227
	14	46	410
	16	59	663
	18	74	997
	20	91	1423
	22	109	1952
SOIL TYPE S-7 Ø = 30 DEGREES AVERAGE EFFECTIVE SOIL UNIT WEIGHT = 90 PCF	10	29	137
	12	41	287
	14	55	509
	16	71	815
	18	89	1219
	20	109	1732
SOIL TYPE S-8 Ø = 30 DEGREES AVERAGE EFFECTIVE SOIL UNIT WEIGHT = 105 PCF	10	34	170
	12	48	347
	14	64	608
	16	83	967
	18	104	1440
	20	128	2041
SOIL TYPE S-9 Ø = 32 DEGREES AVERAGE EFFECTIVE SOIL UNIT WEIGHT = 60 PCF	10	19	82
	12	27	188
	14	37	345
	16	48	563
	18	60	851
	20	73	1219
	22	88	1676
	24	104	2232
SOIL TYPE S-10 Ø = 32 DEGREES AVERAGE EFFECTIVE SOIL UNIT WEIGHT = 75 PCF	10	24	118
	12	34	253
	14	46	452
	16	59	728
	18	74	1091
	20	91	1554
	22	109	2129
SOIL TYPE S-11 Ø = 32 DEGREES AVERAGE EFFECTIVE SOIL UNIT WEIGHT = 90 PCF	10	29	154
	12	41	318
	14	55	560
	16	71	893
	18	89	1331
	20	109	1889
SOIL TYPE S-12 Ø = 32 DEGREES AVERAGE EFFECTIVE SOIL UNIT WEIGHT = 105 PCF	10	34	189
	12	48	383
	14	64	667
	16	83	1057
	18	104	1571
	20	128	2224

REVISIONS		
DATE	BY	DESCRIPTION

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SEMINOLE COUNTY
FLORIDA'S NATURAL CHOICE

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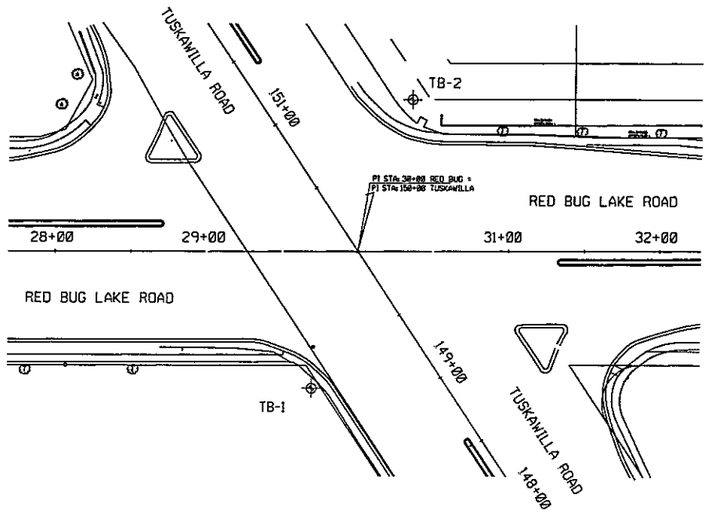
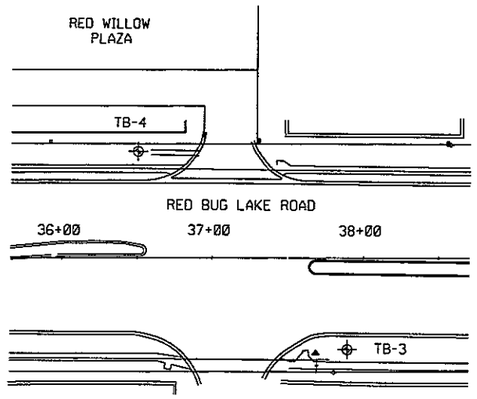
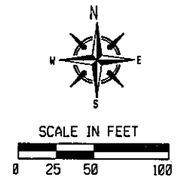
RED BUG LAKE ROAD AND TUSKAWILLA ROAD
INTERSECTION IMPROVEMENTS
TABLE OF FOUNDATION CAPACITIES

SHEET NO.
T-11







LEGEND

- Sand
- Silty-Sand
- (SP) Unified soil classification group symbol
- Water table level
- Estimated seasonal high groundwater level
- GSE Ground surface elevation
- N Standard penetration resistance in blows per foot (18" spoon ASTM D-1586) using 140 lb safety hammer
- W= Natural moisture content (%) (FM 1-T 265)
  -200= Percent passing no. 200 U.S. standard sieve
  LL= Liquid limit (FM 1-T 089)
- Standard Penetration Test (SPT) Boring Location

NOTES

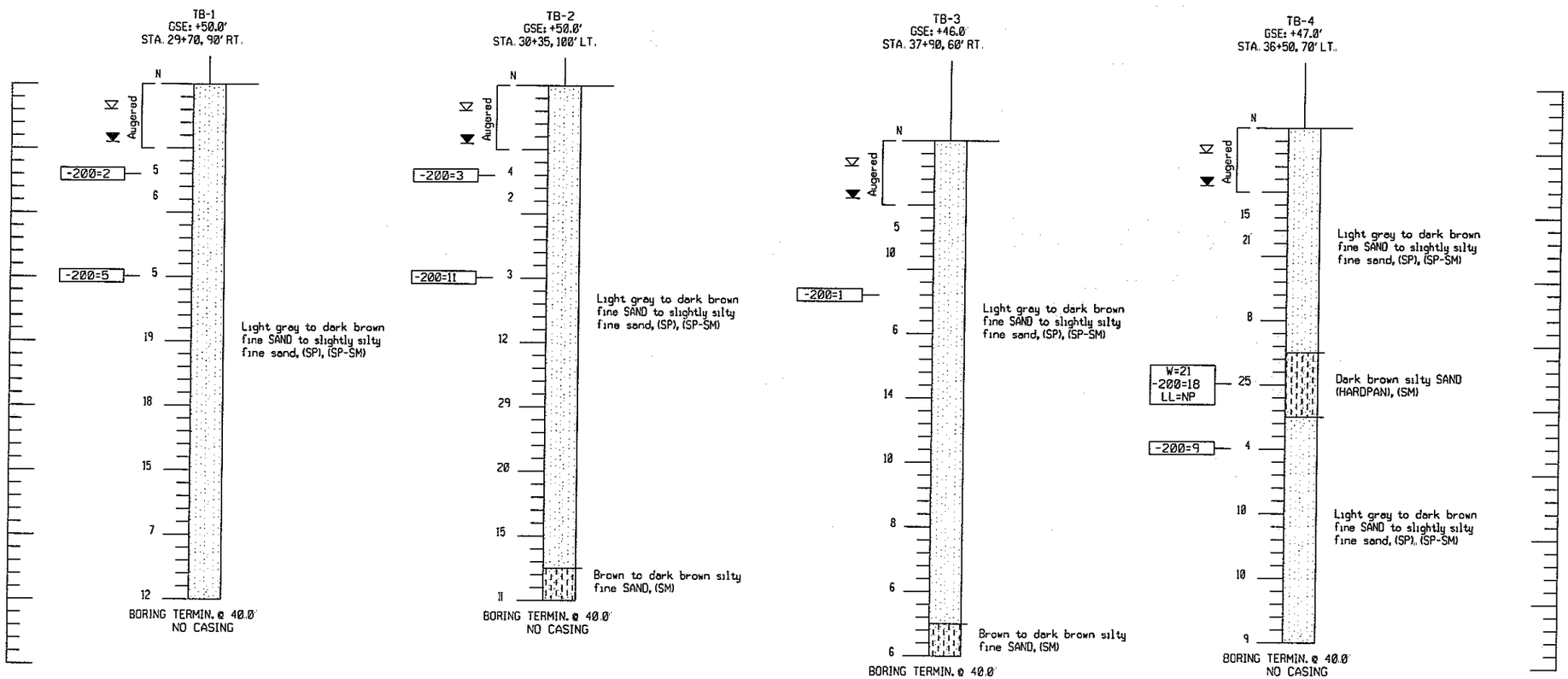
1. Plan view is preliminary for showing boring locations only and may not be indicative of final plans.
2. Subsurface variations between borings should be anticipated as indicated in Section 2-4 of the Standard Specifications.
3. Based on a review of the St. Johns River Water Management District Potentiometric map of the upper Floridan Aquifer for the Project Area, the maximum potential Artesian Head Elevation in the Floridan Aquifer is estimated to be +40 feet, NGVD. The contractor shall be prepared to handle artesian water levels from the Floridan Aquifer up to elevation +40 feet, NGVD.

GRANULAR MATERIALS

Relative Density	SPT (Blows/ft.)
Very loose	Less than 4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	Greater than 50

SILTS AND CLAYS

Consistency	SPT (Blows/ft.)
Very soft	Less than 2
Soft	2-4
Firm	4-8
Stiff	8-15
Very stiff	15-30
Hard	Greater than 30



REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
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1748 33RD STREET
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SEMINOLE COUNTY
FLORIDA'S NATURAL CHOICE

psi Information To Build On
Engineering Consulting Testing
CERTIFICATE OF AUTHORIZATION
No. 00003684

RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS
SOIL SURVEY DATA

SHEET NO.
T-12

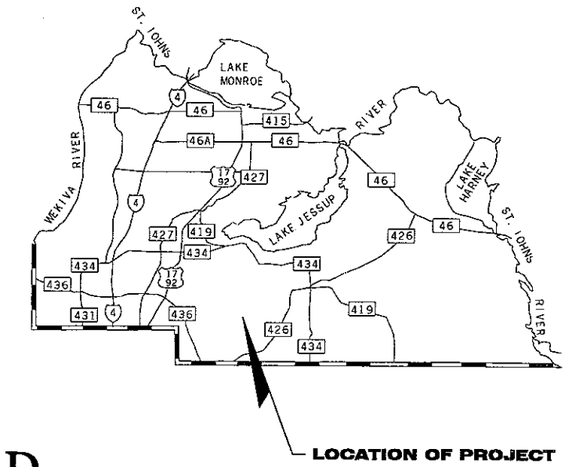
COMPONENTS OF CONTRACT PLANS SET
ROADWAY PLANS
SIGNING AND PAVEMENT MARKING PLANS
SIGNALIZATION PLANS

A DETAILED INDEX APPEARS ON THE KEY SHEET OF EACH COMPONENT

SEMINOLE COUNTY, FLORIDA

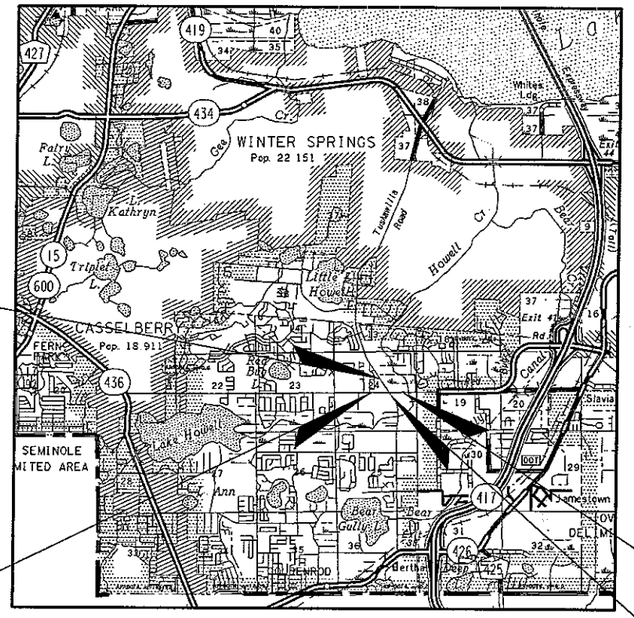
PUBLIC WORKS DIRECTOR
GARY JOHNSON, P.E.

COUNTY ENGINEER
JERRY McCOLLUM, P.E.



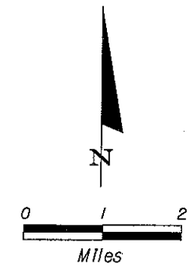
INTERSECTION IMPROVEMENTS
RED BUG LAKE ROAD AND TUSKAWILLA ROAD

INDEX OF ROADWAY PLANS



END PROJECT
TUSKAWILLA ROAD
STA 158+00.00

BEGIN PROJECT
RED BUG LAKE ROAD
STA 13+50.00



END PROJECT
RED BUG LAKE ROAD
STA 45+55.00

BEGIN PROJECT
TUSKAWILLA ROAD
STA 148+00.00

LEGEND

BENCHMARK	TEL	OVERHEAD TELEPHONE LINE	CMP	CORRUGATED METAL PIPE
MAILBOX		TRAFFIC SIGNAL POLE	PVC	POLYVINYL CHLORIDE PIPE
POWER POLE		FIRE HYDRANT	RCP	REINFORCED CONCRETE PIPE
LIGHT POLE		WATER SPIGOT	ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE
GUY WIRE AND ANCHOR		WATER VALVE COVER	VCP	VITRIFIED CLAY PIPE
SIGN		WATER VALVE	BFO	BURIED FIBER OPTICS CABLE MARKER
ELECTRIC SERVICE METER		WATER METER	BTL	BURIED TELEPHONE CABLE MARKER
WIRING PULL BOX		BACKFLOW PREVENTER	CONC	CONCRETE
ELECTRIC MANHOLE		CLEAN OUT		CHAIN LINK FENCE
TELEPHONE MANHOLE	M.E.S.	MITERED END SECTION		WOOD FENCE
SANITARY MANHOLE		CABLE TV. BOX	F.F.	FINISHED FLOOR ELEVATION
STORM MANHOLE		OAK TREE	ELEV.	ELEVATION
OVERHEAD ELECTRIC LINE		CEDAR TREE	INV	INVERT
CONC. FILLED GUARD POST UNLESS OTHERWISE NOTED		MAPLE TREE	M.H.	MANHOLE
TELEPHONE BOX		HEDGE	TEL	OVERHEAD TELEPHONE LINE
WOOD PRIVACY FENCE	DIA.	DIAMETER	SAN	SANITARY SEWER
CHAIN LINK FENCE	TOB	TOP OF BANK	WM	WATER MAIN
FLARED END				
RIGHT-OF-WAY				

GOVERNING STANDARDS AND SPECIFICATIONS:
FLORIDA DEPARTMENT OF TRANSPORTATION,
DESIGN STANDARDS DATED JANUARY 2004,
AND STANDARD SPECIFICATIONS FOR ROAD
AND BRIDGE CONSTRUCTION DATED 2004,
AS AMENDED BY CONTRACT DOCUMENTS.

PROJECT LENGTH IS BASED ON ℄ CONSTRUCTION

LENGTH OF PROJECT

	LINEAR FEET	MILES
ROADWAY	4205	0.796
BRIDGES	0	0
NET LENGTH OF PROJECT	4205	0.796
EXCEPTIONS	0	0
GROSS LENGTH OF PROJECT	4205	0.796

SEMINOLE COUNTY PROJECT MANAGER: BRETT W. BLACKADAR, P.E.

KEY SHEET REVISIONS

DATE	BY	DESCRIPTION

ROADWAY PLANS
ENGINEER OF RECORD:
FURSAN S. MUNJED, P.E.
PROFESSIONAL ENGINEERING CONSULTANTS, INC.
200 EAST ROBINSON STREET SUITE 1560
ORLANDO, FLORIDA 32801

PLANS PREPARED BY:
PEC
PROFESSIONAL ENGINEERING CONSULTANTS INC.
200 EAST ROBINSON STREET SUITE 1560
ORLANDO, FLORIDA 32801

NOTE: THE SCALE OF THESE PLANS MAY HAVE CHANGED DUE TO REPRODUCTION.

60% SUBMITTAL
JULY 15, 2005

ROADWAY PLANS
ENGINEER OF RECORD: FURSAN S. MUNJED, P.E.
DATE:
P.E. NO: 51446

SHEET NO. 1

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SUMMARY OF PAY ITEMS

ITEM NUMBER	DESCRIPTION	UNIT	QUANTITY TOTAL	
			PLANS	FINAL
101-1	MOBILIZATION	LS		
102-1	MAINTENANCE OF TRAFFIC	LS		
104-4	MOWING	AC		
104-13-1	STAKED SILT FENCE (TYPE III)	LF		
104-16	ROCK BAGS	EA		
*104-99	EROSION CONTROL (LUMP SUM)	LS		
109-71	FIELD OFFICE (LUMP SUM)	LS		
110-1-1	CLEARING AND GRUBBING (_____ ACRES)	LS		
110-7	MAIL BOX (FURNISH & INSTALL)	EA		
120-1	REGULAR EXCAVATION	CY		
120-6	EMBANKMENT	CY		
120-71	EARTHWORK (LUMP SUM)	LS		
160-4	TYPE B STABILIZATION	SY		
285-709	OPTIONAL BASE (GROUP 09)	SY		
322-70-1	MILLING EXISTING ASPHALT PAVEMENT (1" AVG. DEPTH)	SY		
331-2	TYPE S ASPHALTIC CONCRETE (220 LBS/SY)	TN		
337-7-3	ASPHALTIC CONCRETE FRICTION COURSE (INC BIT) (FC-3X110 LB/SY) (RUBBER)	TN		
400-1-11	CLASS I CONCRETE (GRAVITY WALLS)	CY		
400-1-15	CLASS I CONCRETE (MISCELLANEOUS) (CONTINGENCY)	CY		
415-1-3	REINFORCING STEEL (GRAVITY WALLS)	LBS		
425-1-321	INLET (CURB TYPE P-2)	EA		
425-1-351	INLET (CURB TYPE P-5)	EA		
425-11	MODIFY EXISTING DRAINAGE STRUCTURE	EA		
430-171-125	PIPE CULVERT (STORM SEWER) (ROUND SHAPE) (18")	LF		
520-1-10	CONCRETE CURB AND GUTTER (TYPE F)	LF		
520-2-1	CURB TYPE 'A'	LF		
520-5-11	4' TRAFFIC SEPARATOR	LF		
*520-5-99	2' TRAFFIC SEPARATOR	LF		
522-1	CONCRETE SIDEWALK, 4" THICK	SY		
522-2	CONCRETE SIDEWALK, 6" THICK	SY		
570-2	SEEDING AND MULCHING	SY		
575-1	SODDING	SY		
580-1-1	LANDSCAPING (SMALL PLANTS) (<10')	LS		
590-70	IRRIGATION SYSTEM RELOCATION/MODIFICATION	LS		
597-70	IRRIGATION SYSTEM	LS		
*666-03	RIGHT OF WAY SURVEY	LS		

* NOT AN FDOT PAY ITEM

PAY ITEM NOTES

102-1 INCLUDES THE COST OF ALL ITEMS NOT INCLUDED UNDER SEPARATE ITEM NEEDED FOR TRAFFIC CONTROL, I.E. SIGNS, BARRICADES, FLAGMEN, TEMPORARY CURB, TEMPORARY PAVEMENT, ETC.. IN ACCORDANCE WITH F.D.O.T. STANDARD SPECIFICATIONS AND PROCEDURES

109-71 INCLUDES PAYMENT FOR MAINTAINING A FIELD OFFICE FOR THE DURATION OF THE PROJECT INCLUDING ELECTRICITY, FURNITURE, TELEPHONE SERVICE, WATER, SEWER ANY OTHER ITEMS NECESSARY TO KEEP THE OFFICE IN OPERATION.

110-1-1 THE LIMITS OF CLEARING AND GRUBBING SHALL BE AS DIRECTED BY THE COUNTY TO PROVIDE FOR CONTINUITY OF CONSTRUCTION OR TO SUIT THE ACTUAL REQUIREMENTS AND INCLUDES ALL ITEMS NOT INCLUDED FOR PAYMENT UNDER SEPARATE ITEMS TO COMPLETE THE WORK. THIS ITEM INCLUDES THE COST OF REMOVAL AND DISPOSAL OF ALL OBSTRUCTIONS AND INCLUDES ALL LABOR AND MATERIALS TO COMPLETE THE WORK.. THIS INCLUDES THE TRIMMING OF TREES AND SHRUBS, REMOVAL OF ALL CONCRETE AND ASPHALT MATERIALS. THESE OBSTRUCTIONS SHALL BE DISPOSED OF OFF SITE, IN AREAS PROVIDED BY THE CONTRACTOR. THE CONTRACTOR SHALL MINIMIZE LIMITS OF CLEARING AND GRUBBING TO THE EXTENT POSSIBLE SO AS TO AVOID DAMAGING EXISTING LANDSCAPING, SOD, IRRIGATION SYSTEMS, ETC..

322-70-1 THE UNIT PRICE FOR MILLING EXISTING ASPHALT PAVEMENT SHALL INCLUDE ALL EQUIPMENT, LABOR AND MATERIALS INCLUDING BITUMINOUS MATERIAL (PLANT MIXES, PRIME COATS AND TACK COATS) AND ALL OTHER INCIDENTAL COSTS TO COMPLETE THE WORK AS SPECIFIED.

331-2 & 337-7-3 THE UNIT PRICE FOR TYPE S ASPHALTIC CONCRETE AND ASPHALTIC CONCRETE FRICTION COURSE SHALL INCLUDE ALL EQUIPMENT, LABOR AND MATERIALS INCLUDING BITUMINOUS MATERIAL (PLANT MIXES, PRIME COATS AND TACK COATS) AND ALL OTHER INCIDENTAL COSTS TO COMPLETE THE WORK AS SPECIFIED.

570-2 THE UNIT PRICE FOR SEEDING AND MULCHING SHALL INCLUDE THE COST OF THE MULCH MATERIAL, QUICK GROWING TYPE AND PERMANENT SEED, WATER, AND FERTILIZER.. MULCH MATERIAL TO BE PLACED AT A RATE OF 4 TONS/ACRE..

575-1- INCLUDES THE COST AND APPLICATION OF WATER AT A RATE OF 30,000 GAL/AC, AND FERTILIZER AT THE RATE OF 400 LB/AC IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS AND TO MAINTAIN THE SODDED AREAS UNTIL FINAL ACCEPTANCE . ALSO INCLUDES TOP SOIL AND/OR MUCK BLANKET.. TYPES OF SODDING MAY VARY, CONTRACTOR TO MATCH EXISTING SOD AT NO ADDITIONAL COST..

590-70 INCLUDES ALL ITEMS NECESSARY TO ADJUST, RELOCATE, AND/OR REPLACE ANY EXISTING IRRIGATION SYSTEM ITEMS WITHIN THE AREA SPECIFIED IN THE PLANS. THIS WILL INCLUDE, BUT IS NOT LIMITED TO, PIPING, FITTINGS, SPRINKLER HEADS, ADJUSTING SPRAY OF SPRINKLER HEADS, RELOCATING AND/OR REPLACING SPRINKLER HEADS, ETC..

*666-03 INCLUDES ALL RIGHT OF WAY SURVEY FOR THE LENGTH OF THE PROJECT. ALL SURVEY WORK SHALL BE SIGNED AND SEALED BY A PROFESSIONAL SURVEYOR & MAPPER REGISTERED IN THE STATE OF FLORIDA.

REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FURSAN S. MUNJED, P.E.
PROFESSIONAL ENGINEER CERTIFICATE NO. 51446
PROFESSIONAL ENGINEERING CONSULTANTS, INC
200 EAST ROBINSON STREET SUITE 1560
ORLANDO, FLORIDA 32801
CERTIFICATE OF AUTHORIZATION NO. 3556

SEMINOLE COUNTY
FLORIDA'S NATURAL CHOICE

PEC
PROFESSIONAL ENGINEERING CONSULTANTS INC.
engineers planners surveyors

RED BUG LAKE ROAD AND TUSKAWILLA ROAD
INTERSECTION IMPROVEMENTS
SUMMARY OF PAY ITEMS

SHEET NO. 2

SUMMARY OF EARTHWORK

FORM 625-000-08
ROADWAY DESIGN 01-2000

DESCRIPTION	CY	
	P	F

SUMMARY OF MAILBOXES

STATION	SIDE	EA

SUMMARY OF DRIVEWAYS

STATION	SIDE	TYPE

REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
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RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS
SUMMARY OF QUANTITIES

SHEET NO.
3

GENERAL NOTES

1. GRADES SHOWN ARE FINISHED GRADES.

2. B.M. DATUM IS NATIONAL GEODETIC VERTICAL DATUM OF 1929 (NGVD-'29.)

3. UTILITIES ARE TO BE ADJUSTED BY OTHERS.

4. EXISTING DRAINAGE STRUCTURES WITHIN CONSTRUCTION LIMITS TO REMAIN UNLESS OTHERWISE SPECIFIED IN PLANS.

5. EXISTING CONCRETE SIDEWALK WITH IN THE R/W SHALL REMAIN UNLESS OTHERWISE SPECIFIED IN THE PLANS.

6. UTILITY OWNERS:

ELECTRIC - DISTRIBUTION/TRANSMISSION
MR. MIGUEL RODRIGUEZ
PROGRESS ENERGY, DISTRIBUTION
3300 EXCHANGE PL.
LAKE MARY, FL 32746
(407) 942-9358

WATER & SEWER
MS. PATTI LEVITI, SENIOR CIVIL ENGINEERING TECHNICIAN
SEMINOLE COUNTY ENVIRONMENTAL SERVICES
500 WEST LAKE MARY BOULEVARD
SANFORD, FL 32773
(407) 665-2132

S. SEMINOLE N. ORANGE COUNTY WASTEWATER TRANS. AUTHORITY
STEVE MILLER, P.E.
410 LAKE HOWELL RD.
MAITLAND, FL. 32751
(407) 628-3419

SEMINOLE COUNTY TRAFFIC ENGINEERING
GLENN YACUBCHIK
140 BUSH LOOP
SANFORD, FL. 32773
(407) 665-5677

COMMUNICATIONS
MR. RICHARD KENNEDY
SPRINT
952 FIRST STREET, MS-FLATH0101
ALTAMONTE SPRINGS, FL 32701
(407) 830-3428

COMMUNICATIONS
MR. JIM FARRELL
BELL SOUTH
450 NORTH GOLDENROD RD.
ORLANDO, FL 32807
(407) 273-5084

CABLE TV
MR. MARVIN USRY
BRIGHT HOUSE NETWORKS
844 MAGUIRE ROAD
OCOEE, FL 34761-2916
(407) 532-8509

GAS & PETROLEUM PRODUCTS
MR. CARLOS QUINTANA
TECO/PEOPLES GAS SYSTEM, INC.
600 WEST ROBINSON STREET
ORLANDO, FL 32801
(407) 420-2675

7. IN AREAS OF CONSTRUCTION, ALL EXISTING UTILITIES, PUBLIC OR PRIVATE, SHALL BE LOCATED BY THE CONTRACTOR AND OWNERS OF SAID UTILITIES SHALL BE NOTIFIED PRIOR TO COMMENCING WORK.

8. THE LOCATION OF THE UTILITIES SHOWN IN THE PLANS ARE APPROXIMATE ONLY. THE EXACT LOCATION SHALL BE DETERMINED BY THE CONTRACTOR DURING CONSTRUCTION.

9. FOR CLARITY, THE EXISTING UTILITIES ARE NOT SHOWN IN THE PROFILE PORTION OF THE PLAN/PROFILE SHEETS. HOWEVER, THEY ARE SHOWN ON THE CROSS SECTIONS AND THE UTILITY ADJUSTMENT SHEETS.

10. ANY NGVD-'29 MONUMENT WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF IN DANGER OF DAMAGE, THE CONTRACTOR SHOULD NOTIFY:

GEODETIC INFORMATION CENTER
ATTN: MARK MAINTENANCE SECTION
N/CG-162
6001 EXECUTIVE BOULEVARD
ROCKVILLE, MARYLAND 20852
TELEPHONE: (301) 443-8319

11. PERMANENT TURNOUTS AND DRIVEWAY CONNECTIONS TO PRIVATE PROPERTY THAT LIE OUTSIDE THE LIMITS OF RIGHT-OF-WAY AND WHERE ACCESS RIGHTS HAVE NOT BEEN ACQUIRED SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TURNOUT DETAILS AND STATE STANDARD SPECIFICATIONS REFERENCED ON THE KEY SHEET OF THESE PLANS. THE COUNTY OR THE COUNTY'S CONTRACTOR SHALL NOT ISOLATE ADJACENT AND/OR REMAINDER PROPERTY UNLESS ACCESS RIGHTS ARE ACQUIRED. ACCESS SHALL BE PROVIDED TO SUCH PROPERTY WHENEVER CONSTRUCTION INTERFERES WITH THE EXISTING MEANS OF ACCESS.

12. ANY PUBLIC LAND CORNER WITHIN THE LIMITS OF CONSTRUCTION IS TO BE PROTECTED. IF A CORNER MONUMENT IS IN DANGER OF BEING DESTROYED AND HAS NOT BEEN PROPERLY REFERENCED, THE CONTRACTOR SHOULD NOTIFY THE COUNTY LOCATION SURVEYOR WITHOUT DELAY.

13. TEMPORARY DRAINAGE SHALL BE PROVIDED DURING CONSTRUCTION TO ENSURE THAT THERE WILL BE NO FLOODING OF PRIVATE PROPERTY.

14. ALL SHOP DRAWINGS MUST BE APPROVED BY SEMINOLE COUNTY PRIOR TO FABRICATION.

15. IF ENCOUNTERED, UNSUITABLE MATERIALS SHALL BE REMOVED FROM CONSTRUCTION AREAS AND BACKFILLED WITH SUITABLE MATERIALS.

16. CONSTRUCTION SHALL INCLUDE REPLACING WITH MATCHING MATERIALS ALL DRIVEWAYS, WALKS, CURBS, ETC. THAT ARE DAMAGED OR REMOVED DUE TO CONSTRUCTION AND WORK SHALL BE COORDINATED WITH PROPERTY OWNERS.

17. ALL EXISTING AND PROPOSED SEWER LINES AND INLETS WITHIN THE LIMITS OF CONSTRUCTION SHALL BE CLEANED OF DEBRIS AND ERODED MATERIALS AT THE FINAL STAGES OF CONSTRUCTION.

18. ANY DRAINAGE PROBLEMS, CREATED BY CONSTRUCTION OR EXISTING BEFORE CONSTRUCTION, THAT ARE NOT ALLEVIATED SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEERING DIVISION.

19. ALL SURVEY CORNERS INDICATED ON THE PLANS SHALL BE REFERENCED AND CERTIFIED BY A REGISTERED PROFESSIONAL LAND SURVEYOR PRIOR TO COMMENCEMENT OF CONSTRUCTION. ALL CORNERS DESTROYED OR OBLITERATED BY CONSTRUCTION SHALL BE RESET AND SO CERTIFIED BY THE LAND SURVEYOR PRIOR TO COMPLETION OF THE PROJECT. CERTIFIED SKETCHES SHALL BE SUBMITTED TO:

SEMINOLE COUNTY PUBLIC WORKS DEPARTMENT
ENGINEERING DIVISION
SURVEY SECTION
520 LAKE MARY BLVD. SUITE 200
SANFORD, FL. 32773

20. ALL PRIVATE AND PUBLIC PROPERTY AFFECTED BY THE CONSTRUCTION WORK SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THE PRE-CONSTRUCTION CONDITION, UNLESS SPECIFICALLY EXEMPTED BY THE PLANS. COST TO BE INCIDENTAL TO OTHER CONSTRUCTION AND NO EXTRA COMPENSATION TO BE ALLOWED.

21. "INLET EL" FOR CURB INLETS REFERS TO THE EDGE OF PAVEMENT ELEVATION AS MEASURED AT THE CENTERLINE OF THE INLET.

22. THE CONTRACTOR IS TO SAWCUT EXISTING PAVEMENT TO A NEAT EDGE IN ALL AREAS WHERE TIEING INTO EXISTING PAVEMENT. IN AREAS WHERE THE TIE IN IS AT THE R/W LINE (Ie. DRIVEWAYS) THE CONTRACTOR WILL TAKE EXTRA CARE TO STAY WITHIN THE PROPOSED R/W.

23. ALL WALLS ARE TO REMAIN UNLESS OTHERWISE SPECIFIED IN THE PLANS.

24. THE CONTRACTOR IS RESPONSIBLE FOR ALL CONDITIONS OF ALL PERMITS.

25. ALL EXCESS EXCAVATION MATERIAL IS THE RESPONSIBILITY OF THE CONTRACTOR.

26. THE CONTRACTOR SHALL PRESERVE TREES BY LIMITING THE EXTENTS OF EXCAVATION AND GRADING , WHERE PRACTICAL.

27. ALL MAILBOXES IMPACTED BY BY THE CONSTRUCTION ARE TO BE TAKEN DOWN AND RESET IN ACCORDANCE WITH FDOT INDEX No. 532.

28. THE SYMBOLS BELOW ARE USED TO INDICATE THOSE LOCATIONS WHERE THE VERTICAL ELEVATION AND/OR HORIZONTAL LOCATION OF UTILITTIES HAVE BEEN VERIFIED.

Vv = VERIFIED VERTICAL ELEVATION
Vh = VERIFIED HORIZONTAL LOCATION
Vvh = VERIFIED VERTICAL ELEVATION AND HORIZONTAL LOCATION

29. ALL EXISTING DRAINAGE STRUCTURES AND PIPES ARE TO REMAIN UNLESS OTHERWISE NOTED

REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
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200 EAST ROBINSON STREET SUITE 1560
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SEMINOLE COUNTY
FLORIDA'S NATURAL CHOICE

PEC
PROFESSIONAL ENGINEERING CONSULTANTS INC
engineers planners surveyors

RED BUG LAKE ROAD AND TUSKAWILLA ROAD
INTERSECTION IMPROVEMENTS
GENERAL NOTES

SHEET NO.
4

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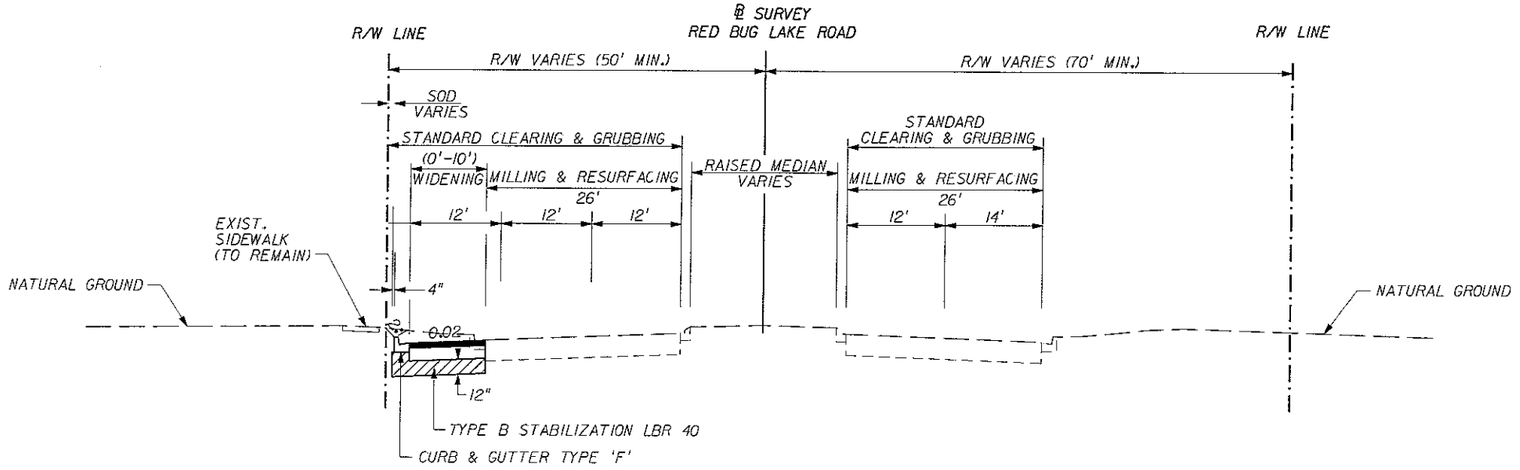

TYPICAL SECTION
RED BUG LAKE ROAD
STA 13+50 TO STA 24+00

PAVEMENT WIDENING
STABILIZATION TYPE 'B'
BASE GROUP 9 (10" LIMEROCK)
3.5" TYPE 'S' STRUCTURAL COURSE
1" FC-3 FRICTIONAL COURSE

MILLING AND RESURFACING
MILL 1.75" OF EXISTING ASPHALT
RESURFACE WITH 0.75" TYPE S-III STRUCTURAL COURSE
1" FC-3 FRICTIONAL COURSE

REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
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RED BUG LAKE ROAD AND TUSKAWILLA ROAD
INTERSECTION IMPROVEMENTS
TYPICAL SECTIONS

SHEET NO. 5

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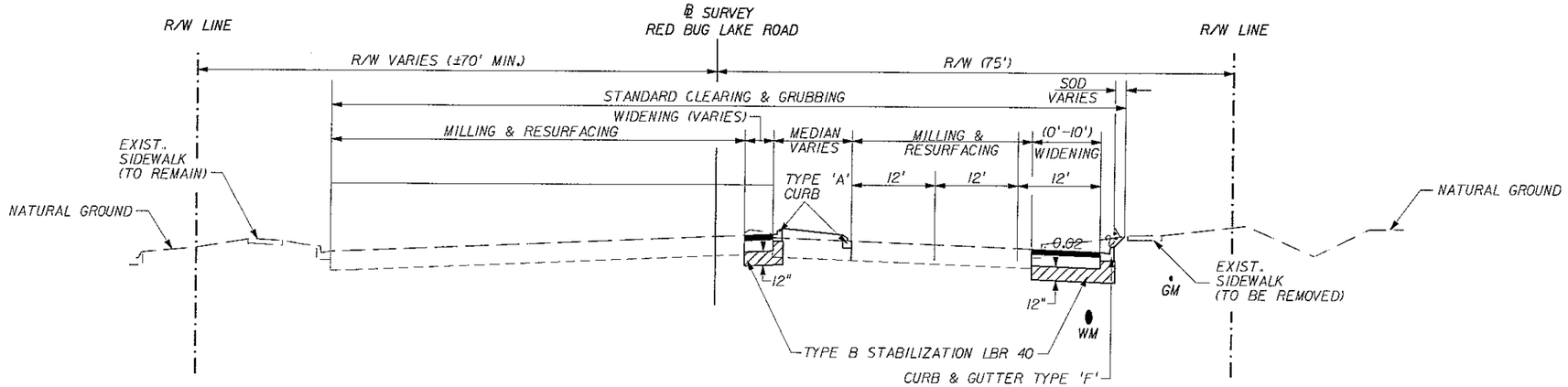

PAVEMENT WIDENING
STABILIZATION TYPE 'B'
BASE GROUP 9 (10" LIMEROCK)
3.5" TYPE 'S' STRUCTURAL COURSE
1" FC-3 FRICTIONAL COURSE

MILLING AND RESURFACING
MILL 1.75" OF EXISTING ASPHALT
RESURFACE WITH 0.75" TYPE S-III STRUCTURAL COURSE
1" FC-3 FRICTIONAL COURSE

TYPICAL SECTION
RED BUG LAKE ROAD
STA 24+00 TO STA 45+55

REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
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RED BUG LAKE ROAD AND TUSKAWILLA ROAD
INTERSECTION IMPROVEMENTS
TYPICAL SECTIONS

SHEET NO.
6

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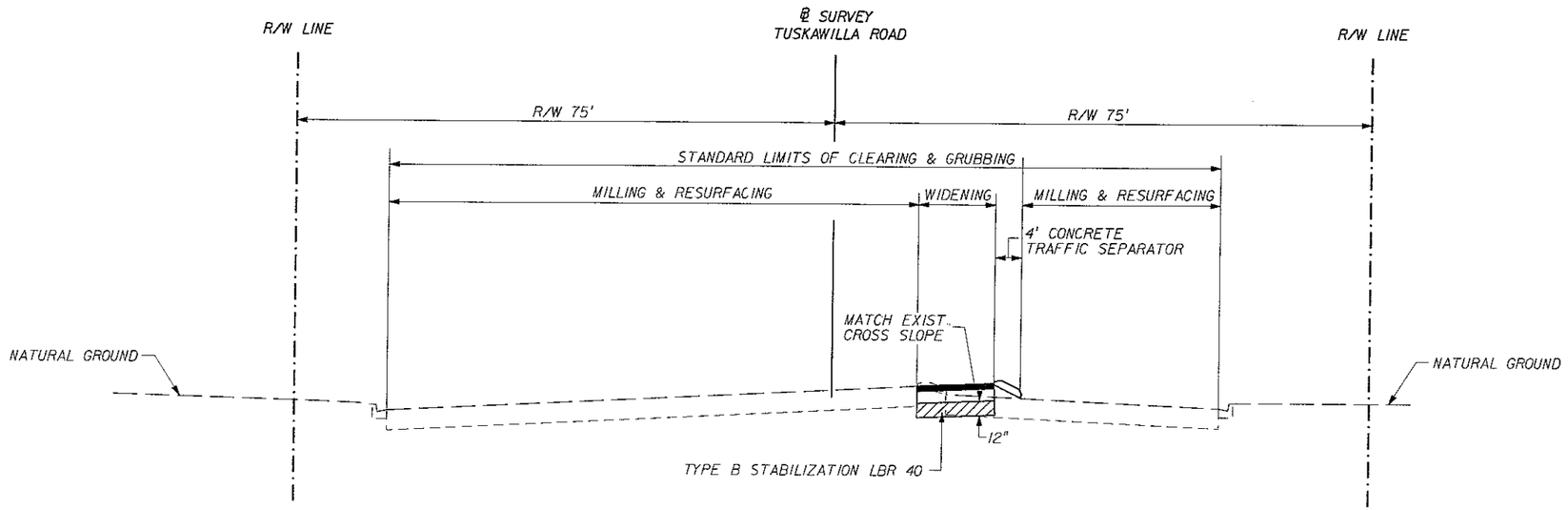

PAVEMENT WIDENING
STABILIZATION TYPE 'B'
BASE GROUP 9 (10" LIMEROCK)
3.5" TYPE 'S' STRUCTURAL COURSE
1" FC-3 FRICTIONAL COURSE

MILLING AND RESURFACING
MILL 1.75" OF EXISTING ASPHALT
RESURFACE WITH 0.75" TYPE S-III STRUCTURAL COURSE
1" FC-3 FRICTIONAL COURSE

TYPICAL SECTION
TUSKAWILLA ROAD
STA 148+00 TO STA 158+00

REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
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PROFESSIONAL ENGINEER CERTIFICATE NO 51446
PROFESSIONAL ENGINEERING CONSULTANTS, INC.
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RED BUG LAKE ROAD AND TUSKAWILLA ROAD
INTERSECTION IMPROVEMENTS
TYPICAL SECTIONS

SHEET NO.
7

$FILE$ $DATE$ $TIME$

S-100

MODIFY EXIST. INLET
REMOVE INLET TOP
ADD TYPE 7 MANHOLE TOP WITH PIPE
STA. 15+55.36 (37.10' LT)
@ SURVEY RED BUG LAKE RD.
RIM EL. 58.20
FL. 54.93 LT
INDEX NOS. 200, 201

S-101

CONST. INLET TYPE P-5
STA. 15+55.00 (48.20' LT)
@ SURVEY RED BUG LAKE RD.
INLET EL. 58.00
FL 54.90 RT
INDEX NOS. 200, 201, 211

S-102

MODIFY EXIST. INLET
REMOVE INLET TOP
ADD TYPE 7 MANHOLE TOP WITH PIPE
STA. 17+57.64 (36.87' LT)
@ SURVEY RED BUG LAKE RD
RIM EL. 57.77
FL. 53.63 LT
INDEX NOS. 200, 201

S-103

CONST. INLET TYPE P-5
STA. 17+58.00 (48.16' LT)
@ SURVEY RED BUG LAKE RD.
INLET EL. 57.57
FL 54.47 RT
INDEX NOS. 200, 201, 211

S-104

MODIFY EXIST. INLET
REMOVE INLET TOP
ADD TYPE 7 MANHOLE TOP WITH PIPE
STA. 19+39.12 (36.91' LT)
@ SURVEY RED BUG LAKE RD
RIM EL. 57.15
FL. 53.68 LT
INDEX NOS. 200, 201

S-105

CONST. INLET TYPE P-5
STA. 19+39.00 (48.12' LT)
@ SURVEY RED BUG LAKE RD.
INLET EL. 56.95
FL 53.85 RT
INDEX NOS. 200, 201, 211

S-106

MODIFY EXIST. INLET
REMOVE INLET TOP
ADD TYPE 7 MANHOLE TOP WITH PIPE
STA. 21+45.81 (36.98' LT)
@ SURVEY RED BUG LAKE RD
RIM EL. 56.52
FL. 52.89 LT
INDEX NOS. 200, 201

S-107

CONST. INLET TYPE P-5
STA. 21+46.00 (48.07' LT)
@ SURVEY RED BUG LAKE RD.
INLET EL. 56.31
FL 53.21 RT
INDEX NOS. 200, 201, 211

S-108

MODIFY EXIST. INLET
REMOVE INLET TOP
ADD TYPE 7 MANHOLE TOP WITH PIPE
STA. 25+55.35 (58.00' RT)
@ SURVEY RED BUG LAKE RD.
RIM EL. 53.97
FL. 50.33 RT
INDEX NOS. 200, 201

S-109

CONST. INLET TYPE P-5
STA. 25+58.50 (67.24' RT)
@ SURVEY RED BUG LAKE RD.
INLET EL. 53.80
FL 50.70 LT
INDEX NOS. 200, 201, 211

S-110

MODIFY EXIST. INLET
REMOVE INLET TOP
ADD TYPE 7 MANHOLE TOP WITH PIPE
STA. 27+56.90 (57.95' RT)
@ SURVEY RED BUG LAKE RD
RIM EL. 52.28
FL. 48.73 RT
INDEX NOS. 200, 201

S-111

CONST. INLET TYPE P-5
STA. 27+60.50 (67.24' RT)
@ SURVEY RED BUG LAKE RD.
INLET EL. 52.09
FL 49.00 LT
INDEX NOS. 200, 201, 211

S-112

MODIFY EXIST. INLET
REMOVE INLET TOP
ADD TYPE 7 MANHOLE TOP WITH PIPE
STA. 29+26.00 (57.95' RT)
@ SURVEY RED BUG LAKE RD
RIM EL. 50.91
FL. 47.47 RT
INDEX NOS. 200, 201

S-113

CONST. INLET TYPE P-5
STA. 29+26.00 (67.24' RT)
@ SURVEY RED BUG LAKE RD.
INLET EL. 50.73
FL 47.63 LT
INDEX NOS. 200, 201, 211

S-114

CONST. TYPE P-7 MANHOLE
STA. 32+13.00 (47.10' RT)
@ SURVEY RED BUG LAKE RD
RIM EL. 48.46
FL. 41.06 RT
INDEX NOS. 200, 201

S-115

CONST. INLET TYPE P-5
STA. 32+13.00 (57.24' RT)
@ SURVEY RED BUG LAKE RD.
INLET EL. 48.28
FL 45.18 LT
INDEX NOS. 200, 201, 211

S-116

MODIFY EXIST. INLET
REMOVE INLET TOP
ADD TYPE 7 MANHOLE TOP WITH PIPE
STA. 33+19.16 (46.00' RT)
@ SURVEY RED BUG LAKE RD.
RIM EL. 47.50
FL. 39.70 RT
INDEX NOS. 200, 201

S-117

CONST. INLET TYPE P-5
STA. 33+15.50 (57.24' RT)
@ SURVEY RED BUG LAKE RD.
INLET EL. 47.32
FL 44.22 LT
INDEX NOS. 200, 201, 211

S-118

MODIFY EXIST. INLET
REMOVE INLET TOP
ADD TYPE 7 MANHOLE TOP WITH PIPE
STA. 36+20.95 (48.80' RT)
@ SURVEY RED BUG LAKE RD
RIM EL. 46.12
FL. 42.63 RT
INDEX NOS. 200, 201

S-119

CONST. INLET TYPE P-5
STA. 36+21.00 (57.24' RT)
@ SURVEY RED BUG LAKE RD.
INLET EL. 45.97
FL 42.87 LT
INDEX NOS. 200, 201, 211

S-120

MODIFY EXIST. INLET
REMOVE INLET TOP
ADD TYPE 7 MANHOLE TOP WITH PIPE
STA. 38+79.00 (50.42' RT)
@ SURVEY RED BUG LAKE RD
RIM EL. 44.12
FL. 40.16 RT
INDEX NOS. 200, 201

S-121

CONST. INLET TYPE P-5
STA. 38+79.00 (57.24' RT)
@ SURVEY RED BUG LAKE RD.
INLET EL. 44.00
FL 40.90 LT
INDEX NOS. 200, 201, 211

S-122

MODIFY EXIST. INLET
REMOVE INLET TOP
ADD TYPE 7 MANHOLE TOP WITH PIPE
STA. 40+80.17 (53.68' RT)
@ SURVEY RED BUG LAKE RD
RIM EL. 42.72
FL. 38.35 RT
INDEX NOS. 200, 201

S-123

CONST. INLET TYPE P-6
STA. 40+80.00 (61.73' RT)
@ SURVEY RED BUG LAKE RD.
INLET EL. 42.67
FL 39.57 LT
INDEX NOS. 200, 201, 211

S-124

CONST. INLET TYPE P-5
STA. 42+99.50 (61.00' RT)
@ SURVEY RED BUG LAKE RD.
INLET EL. 43.36
FL 38.86 LT
INDEX NOS. 200, 201, 211

REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FURSAN S. MUNJED, P.E.
PROFESSIONAL ENGINEER CERTIFICATE NO. 51446
PROFESSIONAL ENGINEERING CONSULTANTS, INC.
200 EAST ROBINSON STREET SUITE 1560
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CERTIFICATE OF AUTHORIZATION NO. 3556

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PROFESSIONAL ENGINEERING CONSULTANTS, INC.
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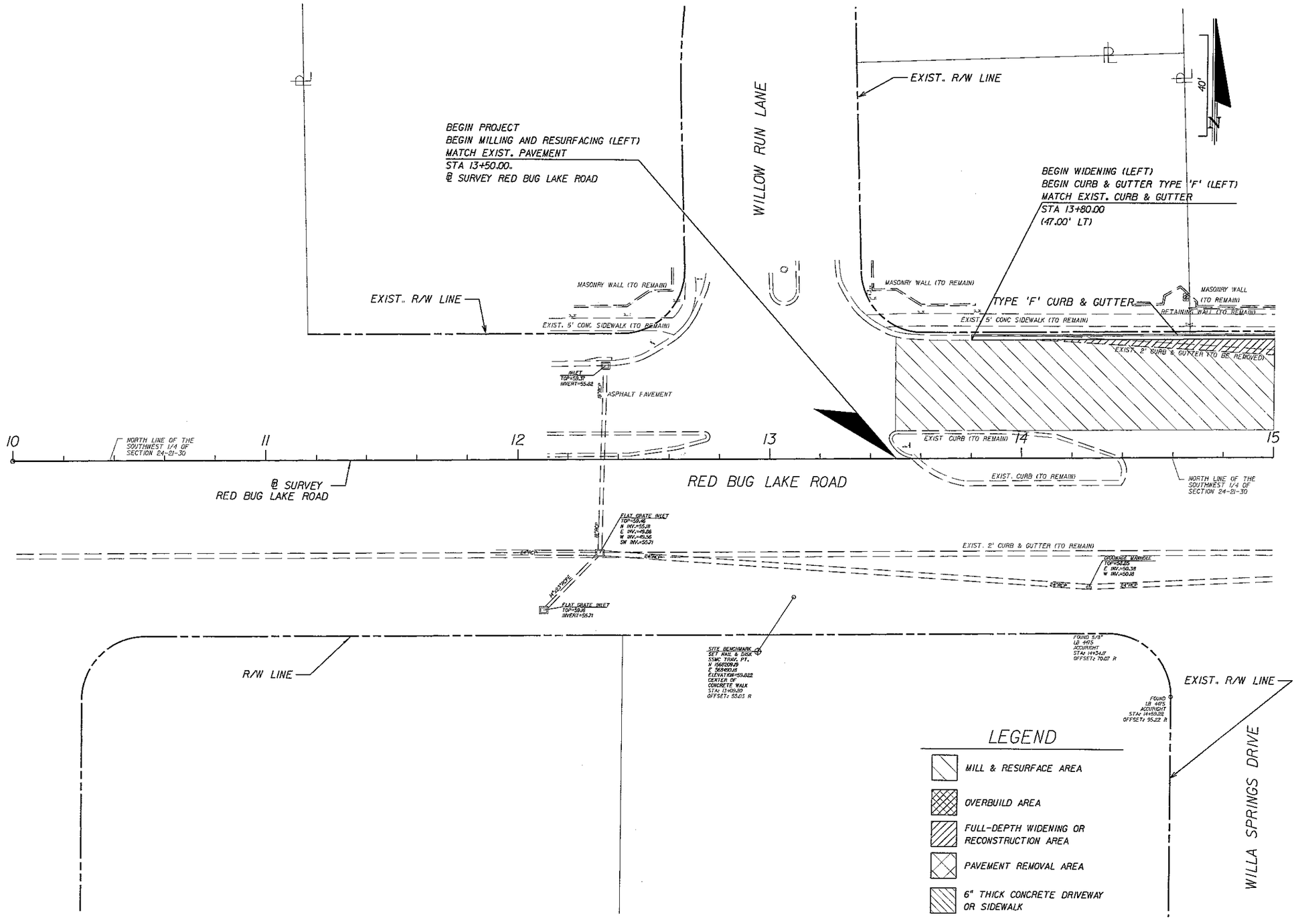
RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS
DRAINAGE STRUCTURE DATA

SHEET NO. 8



REVISIONS		
DATE	BY	DESCRIPTION

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FURSAN S MUNJED, P.E.
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RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS
PLAN STA 10+00 TO STA 15+00

SHEET NO.
9

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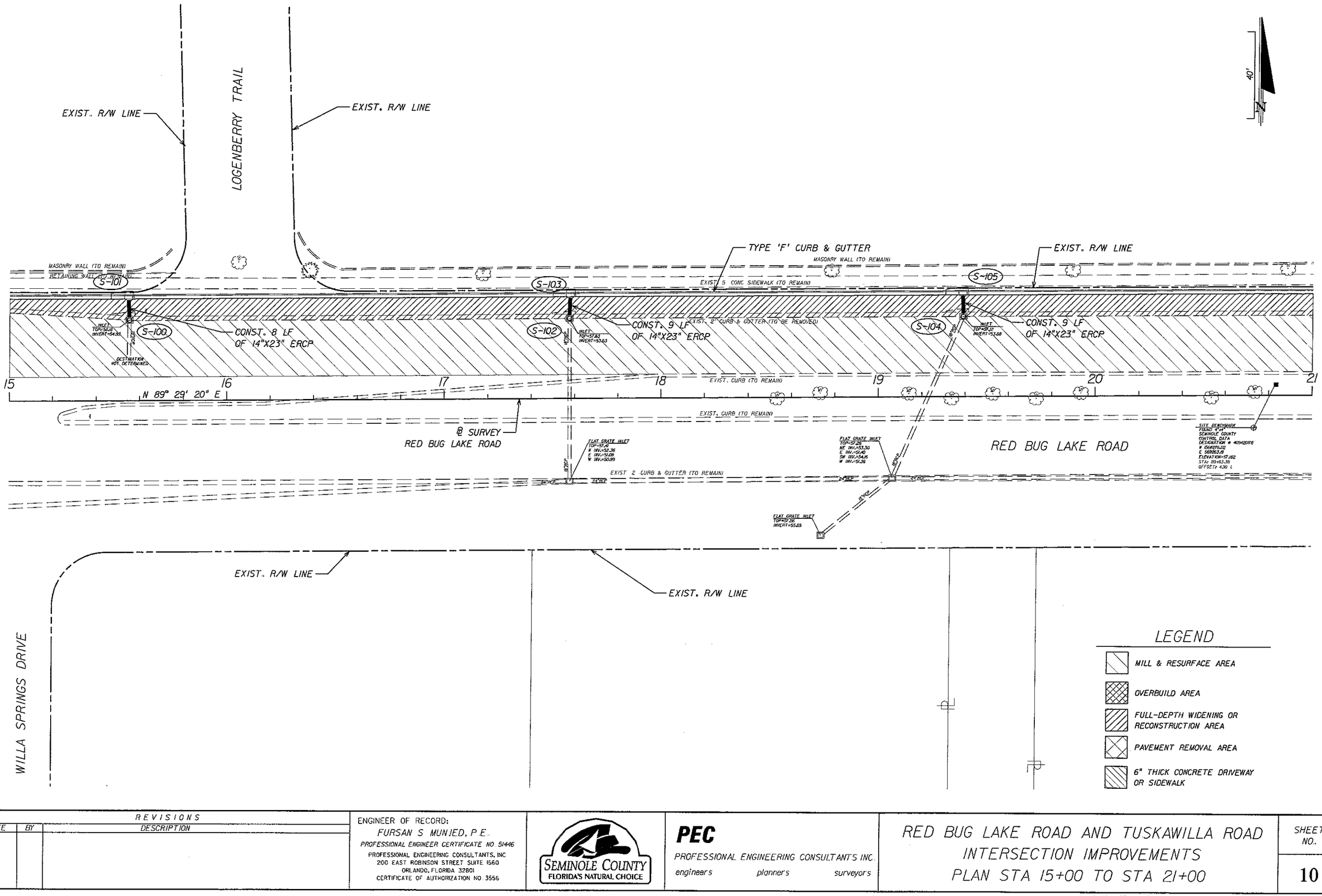

REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
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PROFESSIONAL ENGINEER CERTIFICATE NO. 51446
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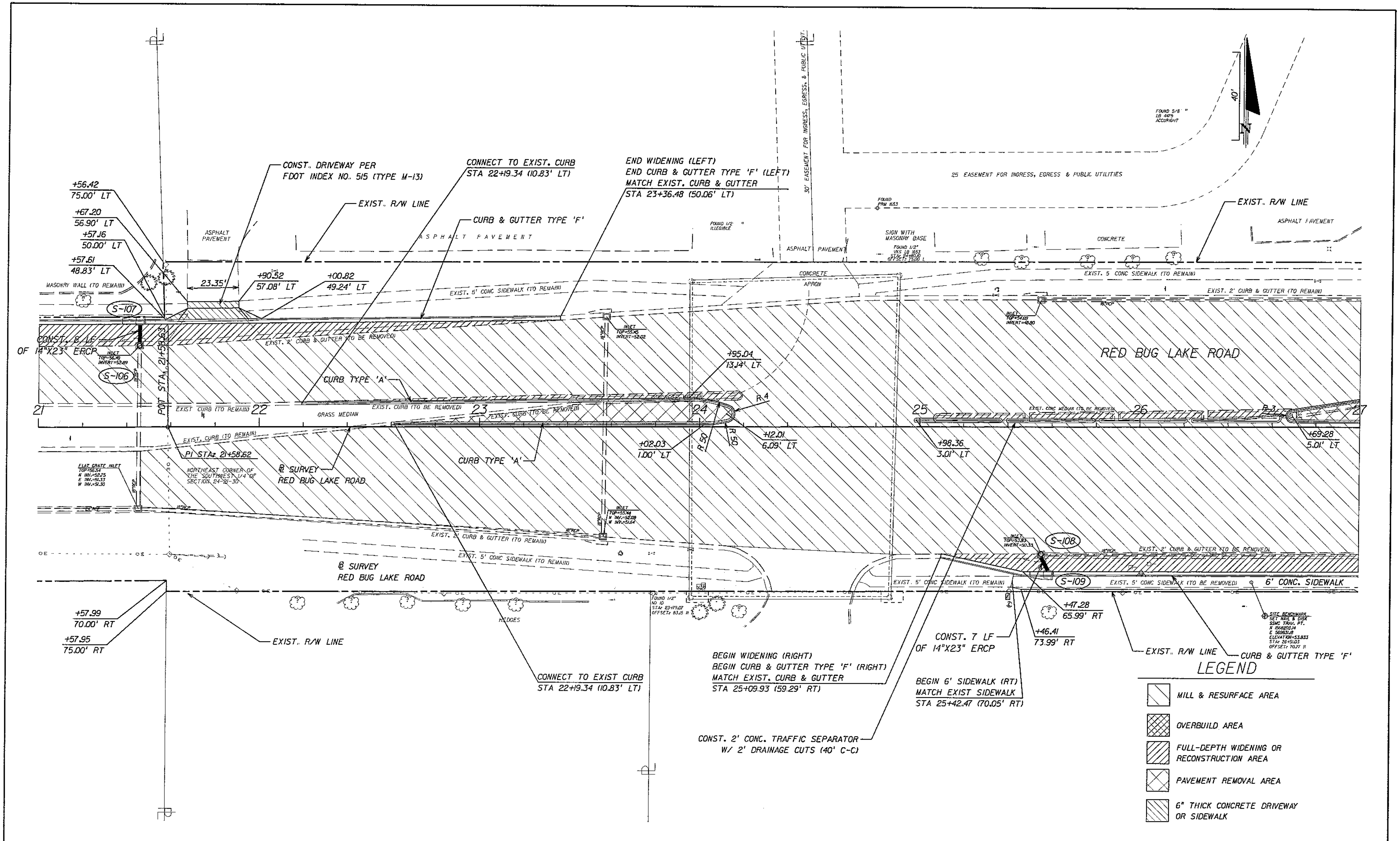
RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS PLAN STA 15+00 TO STA 21+00

SHEET NO. 10


CONST. DRIVEWAY PER
FDOT INDEX NO. 515 (TYPE M-13)
CONNECT TO EXIST. CURB
STA 22+19.34 (10.83' LT)
END WIDENING (LEFT)
END CURB & GUTTER TYPE 'F' (LEFT)
MATCH EXIST. CURB & GUTTER
STA 23+36.48 (50.06' LT)
30' EASEMENT FOR INGRESS, EGRESS, & PUBLIC UTILIT.
25 EASEMENT FOR INGRESS, EGRESS & PUBLIC UTILITIES
FOUND 5/8" LB 4475 ACCURIGHT
40'
N
+56.42
75.00' LT
+67.20
56.90' LT
+57.16
50.00' LT
+57.61
48.83' LT
EXIST. R/W LINE
CURB & GUTTER TYPE 'F'
ASPHALT PAVEMENT
MASONRY WALL (TO REMAIN)
23.35'
+90.52
57.08' LT
+00.82
49.24' LT
FOUND 1/2" ILLEGIBLE
FOUND PRM 1653
SIGN WITH MASONRY BASE
FOUND 1/2" VKS LB 1653 STA: 24+80.10 OFFSET: 75.00 L
CONCRETE
CONCRETE APRON
EXIST. 5' CONC SIDEWALK (TO REMAIN)
EXIST. 2' CURB & GUTTER (TO REMAIN)
S-107
CONST. 8 LF
OF 14"X23" ERCP
INLET TOP=56.49 INVERT=52.89
S-106
EXIST. 2' CURB & GUTTER (TO BE REMOVED)
POT STA. 21+58.63
INLET TOP=55.45 INVERT=52.02
INLET TOP=54.09 INVERT=48.90
RED BUG LAKE ROAD
+95.04
13.14' LT
CURB TYPE 'A'
R 4
21
EXIST CURB (TO REMAIN)
22
GRASS MEDIAN
EXIST. CURB (TO BE REMOVED)
23
24
25
EXIST. CONC MEDIAN (TO BE REMOVED)
26
R 3
27
R 50
R 50
+12.01
6.09' LT
+02.03
1.00' LT
+98.36
3.01' LT
+69.28
5.01' LT
EXIST. CURB (TO REMAIN)
PI STA: 21+58.62
NORTHEAST CORNER OF THE SOUTHWEST 1/4 OF SECTION 24-21-30
℄ SURVEY
RED BUG LAKE ROAD
CURB TYPE 'A'
FLAT GRATE INLET TOP=56.54 N INV.=52.75 E INV.=51.33 W INV.=51.30
INLET TOP=55.44 N INV.=52.09 W INV.=51.64
EXIST. 2' CURB & GUTTER (TO REMAIN)
EXIST. 5' CONC SIDEWALK (TO REMAIN)
INLET TOP=53.93 INVERT=50.33
S-108
EXIST. 2' CURB & GUTTER (TO BE REMOVED)
S-109
EXIST. 5' CONC SIDEWALK (TO BE REMOVED)
6' CONC. SIDEWALK
℄ SURVEY
RED BUG LAKE ROAD
+57.99
70.00' RT
+57.95
75.00' RT
EXIST. R/W LINE
HEDGES
FOUND 1/2" NO ID STA: 23+79.07 OFFSET: 83.15 R
+47.28
65.99' RT
+46.41
73.99' RT
CONST. 7 LF
OF 14"X23" ERCP
SITE BENCHMARK SET NAIL & DISK SSMC TRAV. PT. N 1568203.14 E 569831.18 ELEVATION=53.933 STA: 26+51.03 OFFSET: 70.27 R
EXIST. R/W LINE
CURB & GUTTER TYPE 'F'
CONNECT TO EXIST CURB
STA 22+19.34 (10.83' LT)
BEGIN WIDENING (RIGHT)
BEGIN CURB & GUTTER TYPE 'F' (RIGHT)
MATCH EXIST. CURB & GUTTER
STA 25+09.93 (59.29' RT)
BEGIN 6' SIDEWALK (RT)
MATCH EXIST SIDEWALK
STA 25+42.47 (70.05' RT)
CONST. 2' CONC. TRAFFIC SEPARATOR
W/ 2' DRAINAGE CUTS (40' C-C)
LEGEND
MILL & RESURFACE AREA
OVERBUILD AREA
FULL-DEPTH WIDENING OR RECONSTRUCTION AREA
PAVEMENT REMOVAL AREA
6" THICK CONCRETE DRIVEWAY OR SIDEWALK

REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FURSAN S. MUNJED, P.E.
PROFESSIONAL ENGINEER CERTIFICATE NO. 51446
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RED BUG LAKE ROAD AND TUSKAWILLA ROAD
INTERSECTION IMPROVEMENTS
PLAN STA 21+00 TO STA 27+00

SHEET NO.
11

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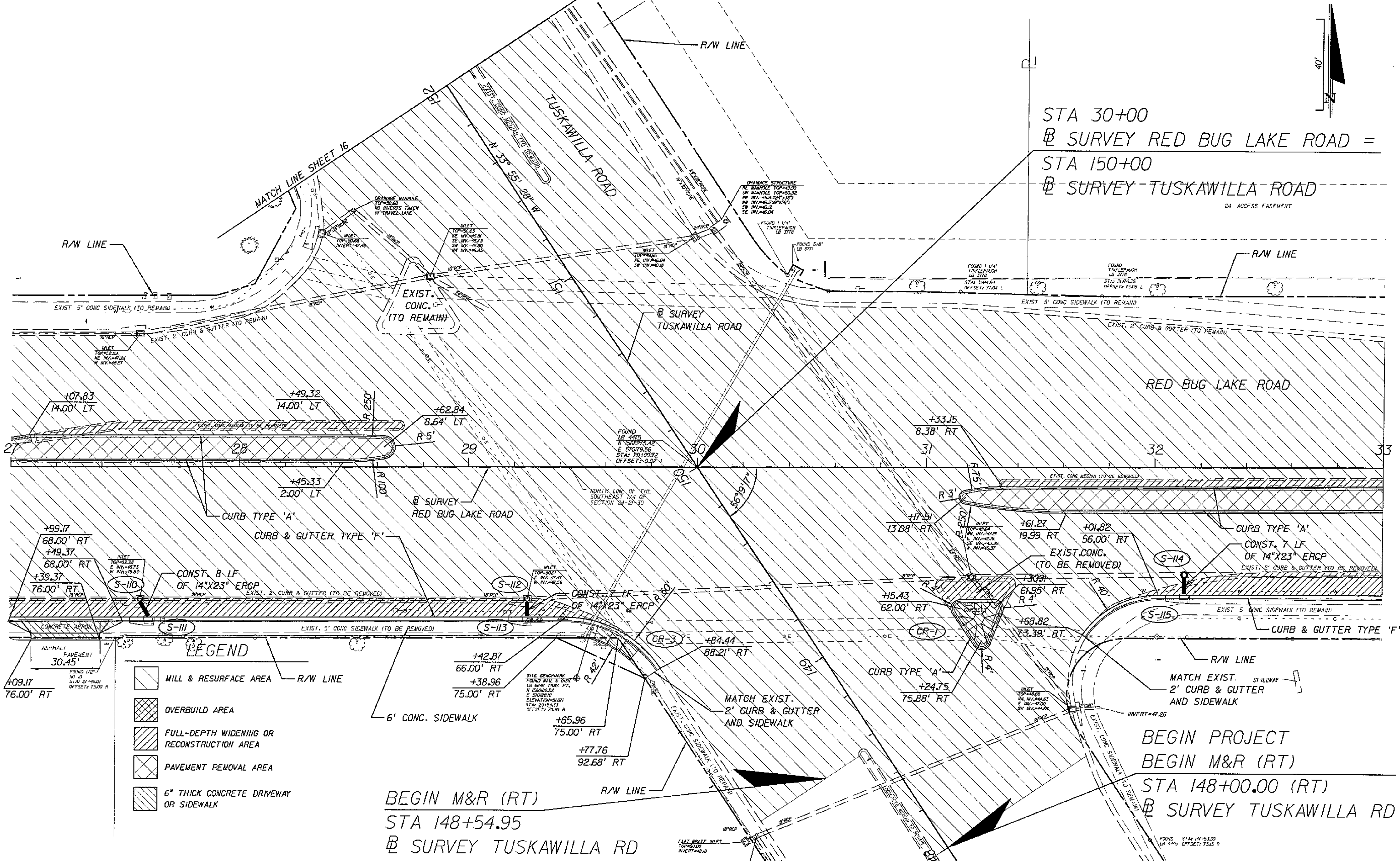
STA 30+00
℄ SURVEY RED BUG LAKE ROAD =
STA 150+00
℄ SURVEY TUSKAWILLA ROAD
24 ACCESS EASEMENT
40'
N
R/W LINE
MATCH LINE SHEET 16
TUSKAWILLA ROAD
N 33° 55' 28" W
EXIST. CONC MEDIAN (TO REMAIN)
EXIST. CONC. (TO REMAIN)
℄ SURVEY TUSKAWILLA ROAD
EXIST 5' CONC SIDEWALK (TO REMAIN)
EXIST. 2' CURB & GUTTER (TO REMAIN)
RED BUG LAKE ROAD
DRAINAGE MANHOLE TOP=50.68 NO INVERTS TAKEN IN TRAVEL LANE
INLET TOP=50.68 INVERT=47.48
INLET TOP=50.63 NE INV.=46.81 SE INV.=46.73 SW INV.=46.80 NW INV.=46.83
INLET TOP=49.85 NE INV.=46.04 SW INV.=46.18
DRAINAGE STRUCTURE NE MANHOLE TOP=49.90 SW MANHOLE TOP=50.32 NW INV.=45.93(24"x38") NW INV.=46.17(19"x30") SW INV.=46.12 SE INV.=46.04
FOUND 1 1/4" TINKLEPAUGH LB 3778
FOUND 5/8" LB 6771
FOUND 1 1/4" TINKLEPAUGH LB 3778 STA: 31+14.54 OFFSET: 77.04 L
FOUND TINKLEPAUGH LB 3778 STA: 31+76.35 OFFSET: 75.05 L
INLET TOP=52.59 NE INV.=47.24 W INV.=48.57
FOUND LB 4475 N 1568275.42 E 570179.56 STA: 29+99.72 OFFSET: 0.02 L
NORTH LINE OF THE SOUTHEAST 1/4 OF SECTION 24-21-30
56°9'17"
+07.83 14.00' LT
+49.32 14.00' LT
+62.84 8.64' LT
+45.33 2.00' LT
+33.15 8.38' RT
R 250'
R 5'
R 100'
R 75'
R 3'
EXIST. CONC MEDIAN (TO BE REMOVED)
℄ SURVEY RED BUG LAKE ROAD
CURB TYPE 'A'
CURB & GUTTER TYPE 'F'
+99.17 68.00' RT
+49.37 68.00' RT
+39.37 76.00' RT
+09.17 76.00' RT
CONCRETE APRON
ASPHALT PAVEMENT 30.45'
FOUND 1/2" NO ID STA: 27+46.07 OFFSET: 75.00 R
INLET TOP=52.28 E INV.=48.73 W INV.=48.83
S-110
S-111
S-112
S-113
S-114
S-115
CR-1
CR-3
CONST. 8 LF OF 14"X23" ERCP
CONST. 7 LF OF 14"X23" ERCP
EXIST. 2' CURB & GUTTER (TO BE REMOVED)
EXIST. 5' CONC SIDEWALK (TO BE REMOVED)
INLET TOP=50.91 E INV.=47.47 W INV.=47.58
R 50'
R 42'
+42.87 66.00' RT
+38.96 75.00' RT
+65.96 75.00' RT
+77.76 92.68' RT
+84.44 88.21' RT
SITE BENCHMARK FOUND NAIL & DISK LB 6846 TRAV. PT. N 1566182.52 E 570128.18 ELEVATION=51.071 STA: 29+54.33 OFFSET: 70.50 R
6' CONC. SIDEWALK
MATCH EXIST. 2' CURB & GUTTER AND SIDEWALK
EXIST. CONC SIDEWALK (TO REMAIN)
CONCRETE MEDIAN TO REMAIN
FLAT GRATE INLET TOP=50.08 INVERT=48.18
BEGIN M&R (RT)
STA 148+54.95
℄ SURVEY TUSKAWILLA RD
+17.51 13.08' RT
+61.27 19.99 RT
+01.82 56.00' RT
+15.43 62.00' RT
+30.91 61.95' RT
+68.82 73.39' RT
+24.75 75.88' RT
R 4'
R 40'
INLET TOP=49.04 NW INV.=44.51 E INV.=42.79 SE INV.=43.99 W INV.=45.37
EXIST.CONC. (TO BE REMOVED)
EXIST 5 CONC SIDEWALK (TO REMAIN)
INLET TOP=48.88 NW INV.=44.63 E INV.=47.00 SW INV.=44.68
INVERT=47.26
SPILLWAY
BEGIN PROJECT
BEGIN M&R (RT)
STA 148+00.00 (RT)
℄ SURVEY TUSKAWILLA RD
FOUND LB 4475 STA: 147+53.99 OFFSET: 75.15 R
27
28
29
30
31
32
33
147
148
149
150
151
152
LEGEND
MILL & RESURFACE AREA
OVERBUILD AREA
FULL-DEPTH WIDENING OR RECONSTRUCTION AREA
PAVEMENT REMOVAL AREA
6" THICK CONCRETE DRIVEWAY OR SIDEWALK

REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FURSAN S. MUNJED, P.E.
PROFESSIONAL ENGINEER CERTIFICATE NO 51446
PROFESSIONAL ENGINEERING CONSULTANTS, INC
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RED BUG LAKE ROAD AND TUSKAWILLA ROAD
INTERSECTION IMPROVEMENTS
PLAN STA 27+00 TO STA 33+00

SHEET NO. 12

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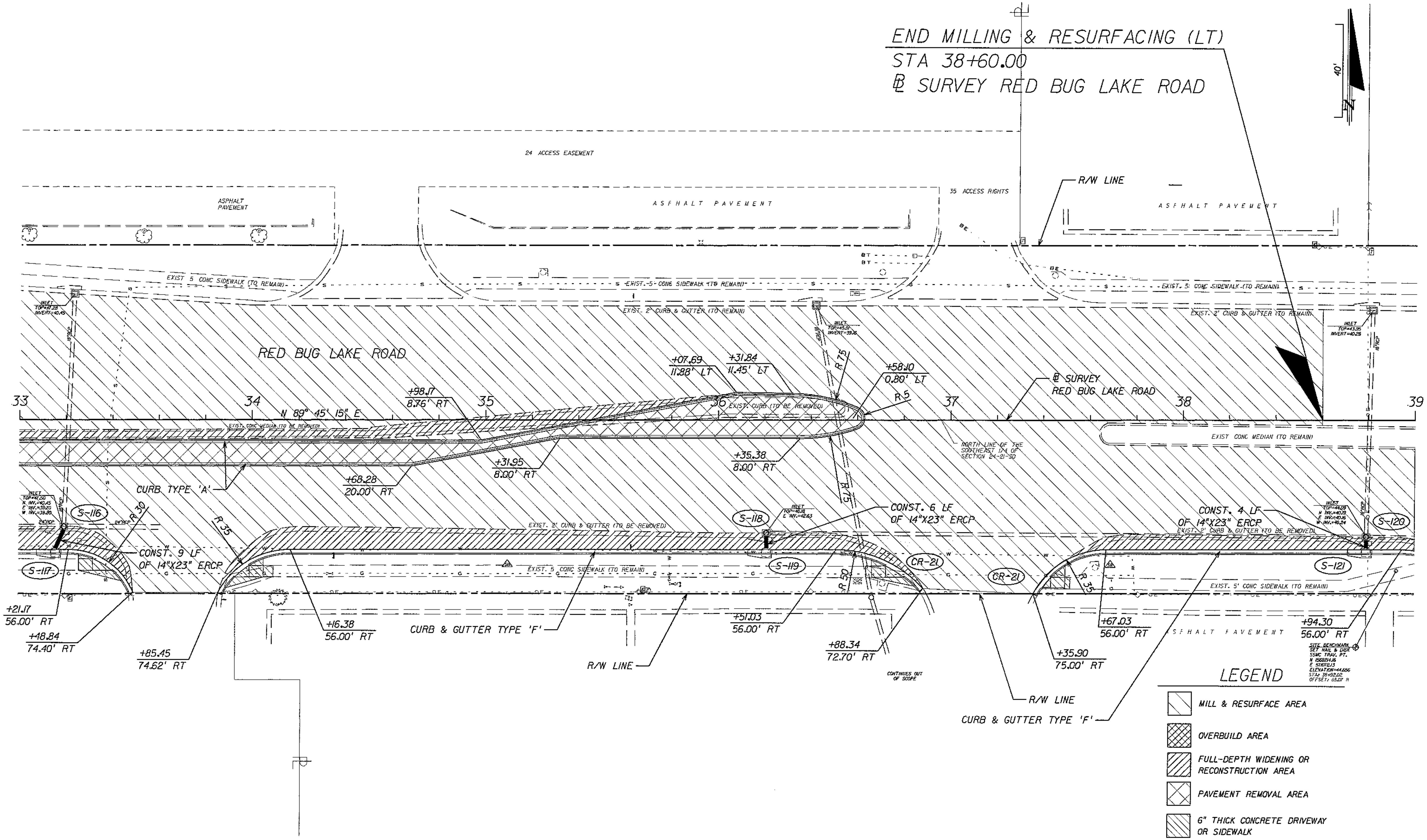
END MILLING & RESURFACING (LT)
STA 38+60.00
℄ SURVEY RED BUG LAKE ROAD
40'
24 ACCESS EASEMENT
ASPHALT PAVEMENT
ASFHALT PAVEMENT
35 ACCESS RIGHTS
R/W LINE
EXIST 5 CONC SIDEWALK (TO REMAIN)
EXIST. 2' CURB & GUTTER (TO REMAIN)
INLET TOP=47.28 INVERT=40.45
INLET TOP=45.91 INVERT=39.16
INLET TOP=43.95 INVERT=40.26
RED BUG LAKE ROAD
+07.69 11.88' LT
+31.84 11.45' LT
+58.10 0.80' LT
R 75
R 5
+98.17 8.76' RT
33
34
35
36
37
38
39
N 89° 45' 15" E
EXIST. CURB (TO BE REMOVED)
EXIST. CONC MEDIAN (TO BE REMOVED)
℄ SURVEY RED BUG LAKE ROAD
EXIST CONC MEDIAN (TO REMAIN)
NORTH LINE OF THE SOUTHEAST 1/4 OF SECTION 24-21-30
+31.95 8.00' RT
+35.38 8.00' RT
+68.28 20.00' RT
CURB TYPE 'A'
INLET TOP=47.50 N INV.=40.45 E INV.=39.70 W INV.=39.80
S-116
R 30
R 35
CONST. 9 LF OF 14"X23" ERCP
S-117
S-118
INLET TOP=46.18 E INV.=42.63
CONST. 6 LF OF 14"X23" ERCP
EXIST. 2' CURB & GUTTER (TO BE REMOVED)
EXIST. 5 CONC SIDEWALK (TO REMAIN)
S-119
CR-21
CR-21
R 50
CONST. 4 LF OF 14"X23" ERCP
INLET TOP=44.09 N INV.=40.19 E INV.=40.16 W INV.=40.24
S-120
S-121
EXIST. 5' CONC SIDEWALK (TO REMAIN)
+21.17 56.00' RT
+48.84 74.40' RT
+85.45 74.62' RT
+16.38 56.00' RT
CURB & GUTTER TYPE 'F'
R/W LINE
+51.03 56.00' RT
+88.34 72.70' RT
CONTINUES OUT OF SCOPE
+67.03 56.00' RT
+35.90 75.00' RT
R/W LINE
CURB & GUTTER TYPE 'F'
+94.30 56.00' RT
SITE BENCHMARK SET NAIL & DISK SSMC TRAV. PT. N 1568214.16 E 571072.13 ELEVATION=44.656 STA: 38+92.02 OFFSET: 65.07 R
LEGEND
MILL & RESURFACE AREA
OVERBUILD AREA
FULL-DEPTH WIDENING OR RECONSTRUCTION AREA
PAVEMENT REMOVAL AREA
6" THICK CONCRETE DRIVEWAY OR SIDEWALK

REVISIONS		
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RED BUG LAKE ROAD AND TUSKAWILLA ROAD
INTERSECTION IMPROVEMENTS
PLAN STA 33+00 TO STA 39+00

SHEET NO.
13

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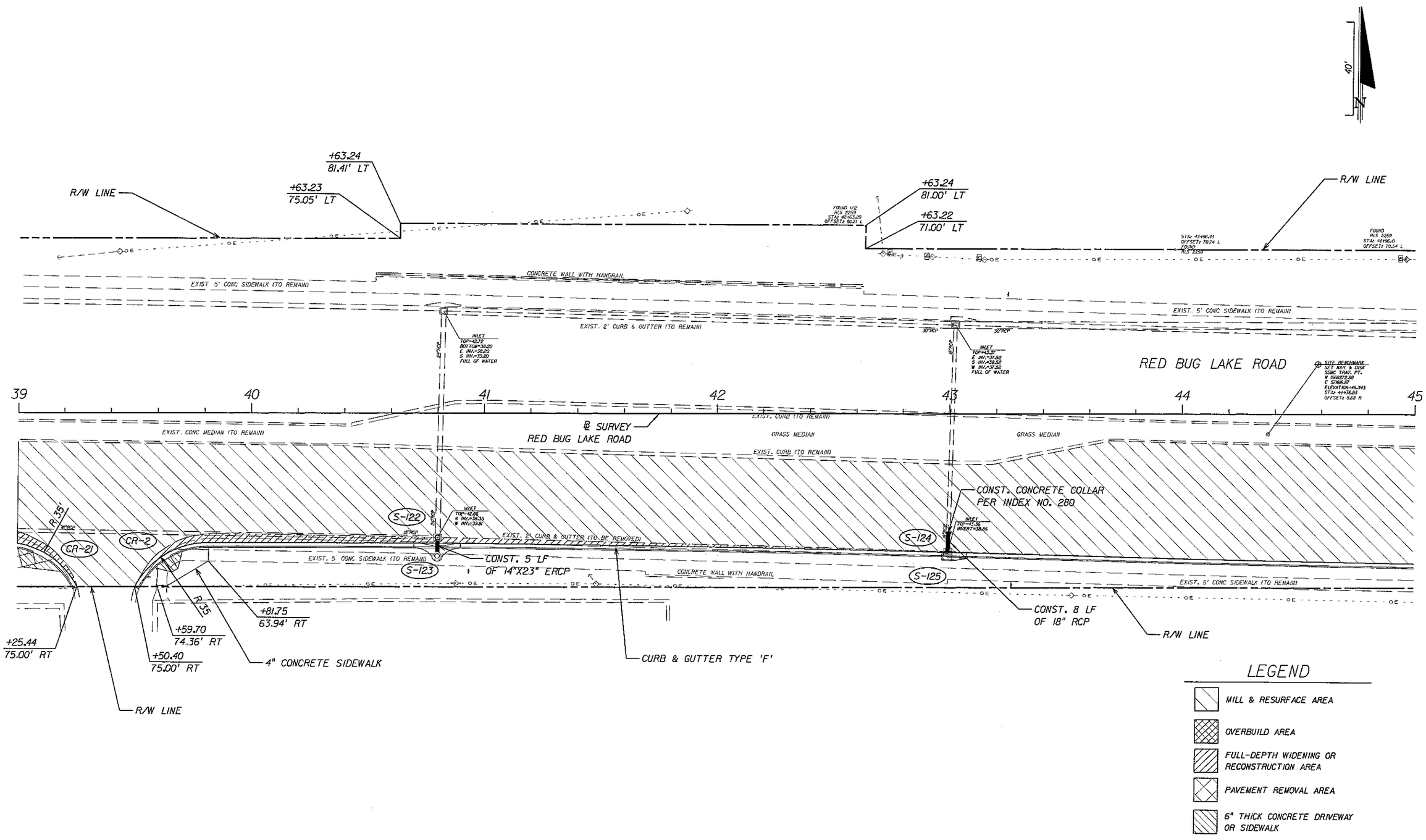

LEGEND

- MILL & RESURFACE AREA
- OVERBUILD AREA
- FULL-DEPTH WIDENING OR RECONSTRUCTION AREA
- PAVEMENT REMOVAL AREA
- 6" THICK CONCRETE DRIVEWAY OR SIDEWALK

REVISIONS		
DATE	BY	DESCRIPTION

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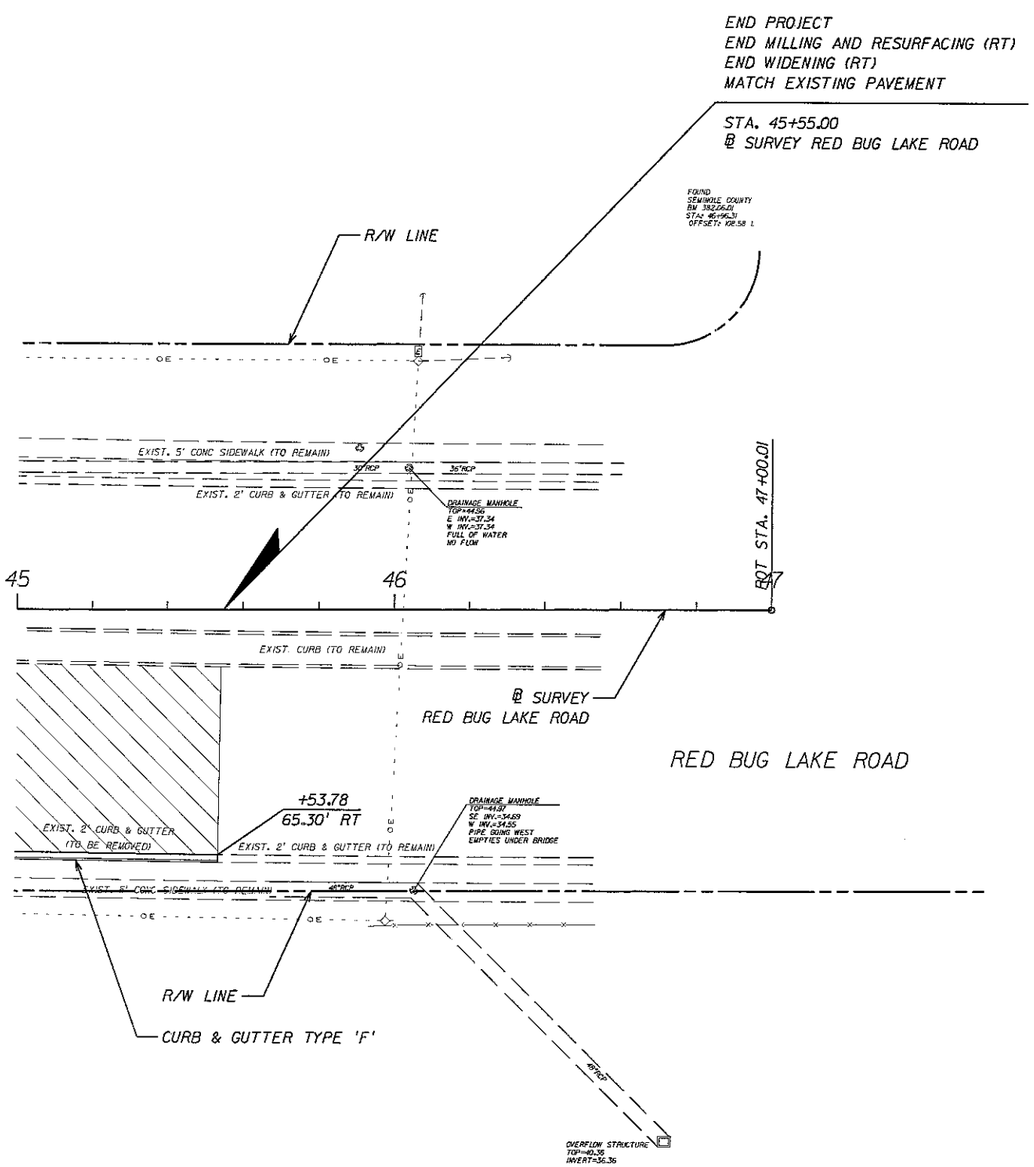
RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS PLAN STA 39+00 TO STA 45+00

SHEET NO. 14



LEGEND

- MILL & RESURFACE AREA
- OVERBUILD AREA
- FULL-DEPTH WIDENING OR RECONSTRUCTION AREA
- PAVEMENT REMOVAL AREA
- 6" THICK CONCRETE DRIVEWAY OR SIDEWALK

REVISIONS		
DATE	BY	DESCRIPTION

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RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS PLAN STA 45+00 TO STA 47+00

SHEET NO.
15

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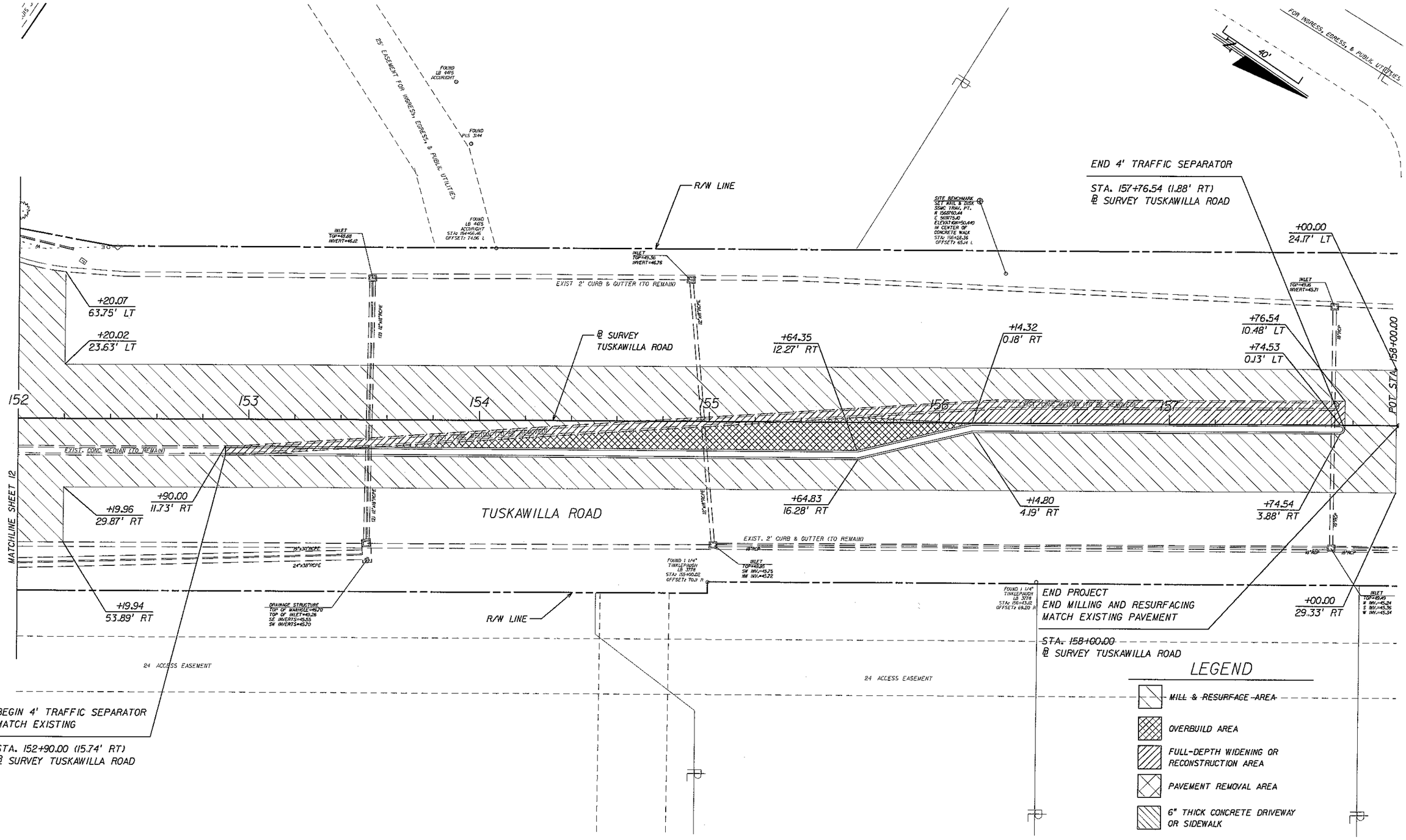

REVISIONS		
DATE	BY	DESCRIPTION

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RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS PLAN STA 152+00 TO STA 158+00

SHEET NO. 16

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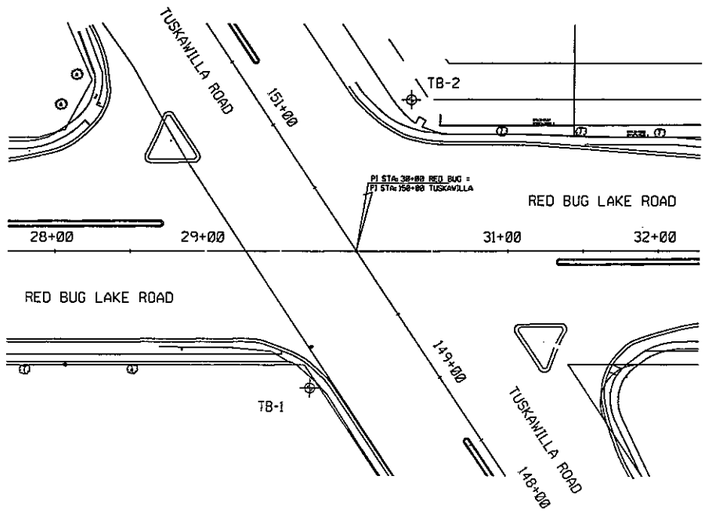
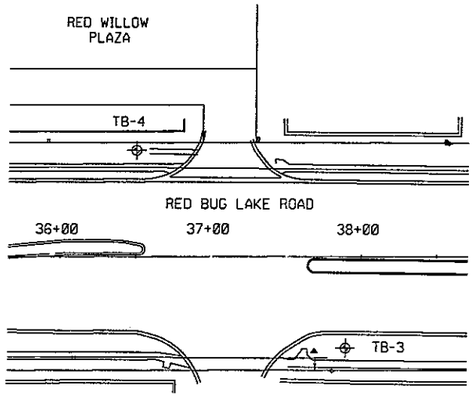
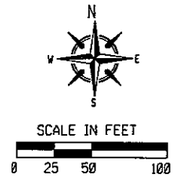






LEGEND

- Sand
- Silty-Sand
- (SP) Unified soil classification group symbol
- Water table level
- Estimated seasonal high groundwater level
- GSE Ground surface elevation
- N Standard penetration resistance in blows per foot (18" spoon ASTM D-1586) using 140 lb safety hammer
- W= Natural moisture content (%) (FM 1-T 265)
- -200= Percent passing no. 200 U.S. standard sieve
- LL= Liquid limit (FM 1-T 089)
- Standard Penetration Test (SPT) Boring Location

NOTES

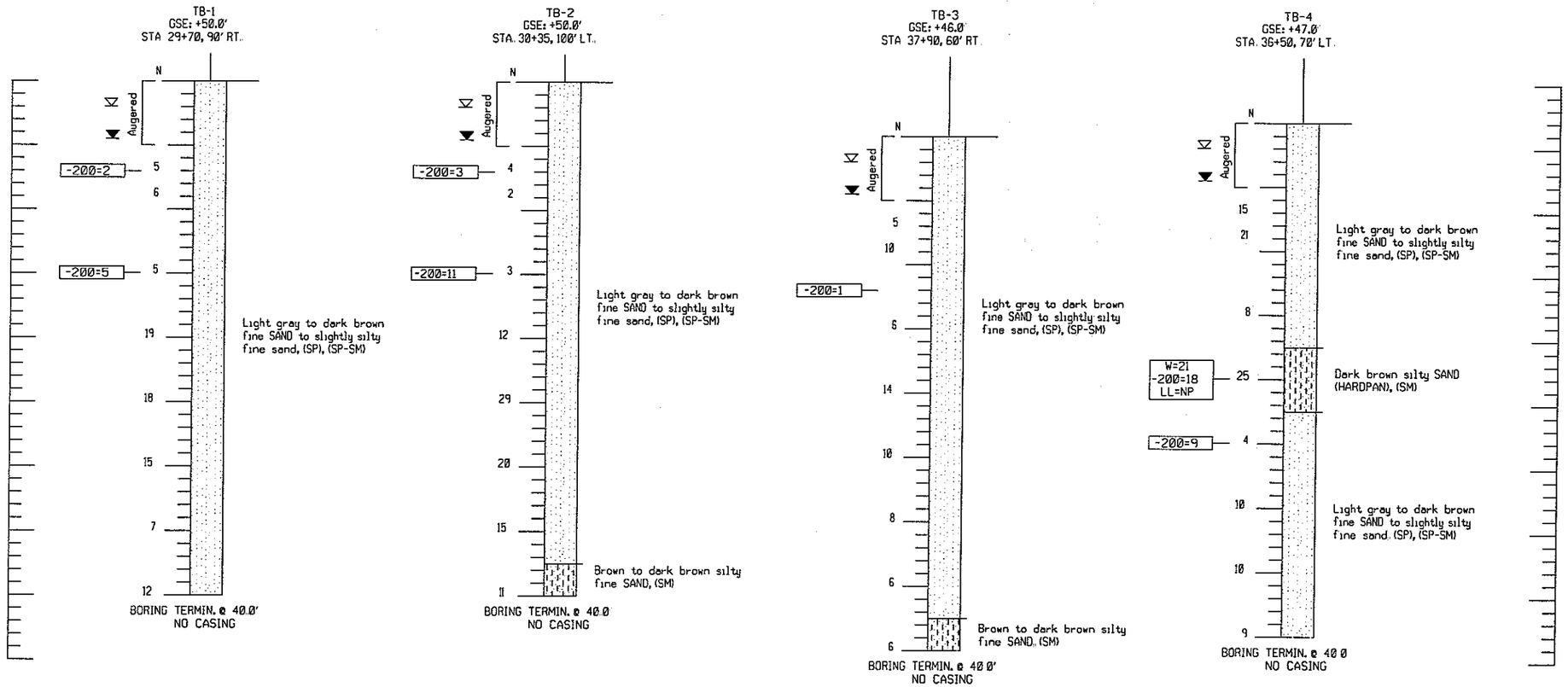
1. Plan view is preliminary for showing boring locations only and may not be indicative of final plans.
2. Subsurface variations between borings should be anticipated as indicated in Section 2-4 of the Standard Specifications.
3. Based on a review of the St. Johns River Water Management District Potentiometric map of the upper Floridan Aquifer for the Project Area, the maximum potential Artesian Head Elevation in the Floridan Aquifer is estimated to be +40 feet, NGVD. The contractor shall be prepared to handle artesian water levels from the Floridan Aquifer up to elevation +40 feet, NGVD.

GRANULAR MATERIALS

Relative Density	SPT (Blows/ft.)
Very loose	Less than 4
Loose	4-10
Medium Dense	10-30
Dense	30-50
Very Dense	Greater than 50

SILTS AND CLAYS

Consistency	SPT (Blows/ft.)
Very soft	Less than 2
Soft	2-4
Firm	4-8
Stiff	8-15
Very stiff	15-30
Hard	Greater than 30



REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:

MUSTAPHA A. ABBOUD, P.E. #56112
PROFESSIONAL SERVICE INDUSTRIES, INC.
1748 33RD STREET
ORLANDO, FLORIDA 32839
(407)304-5560

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Engineering Consulting Testing
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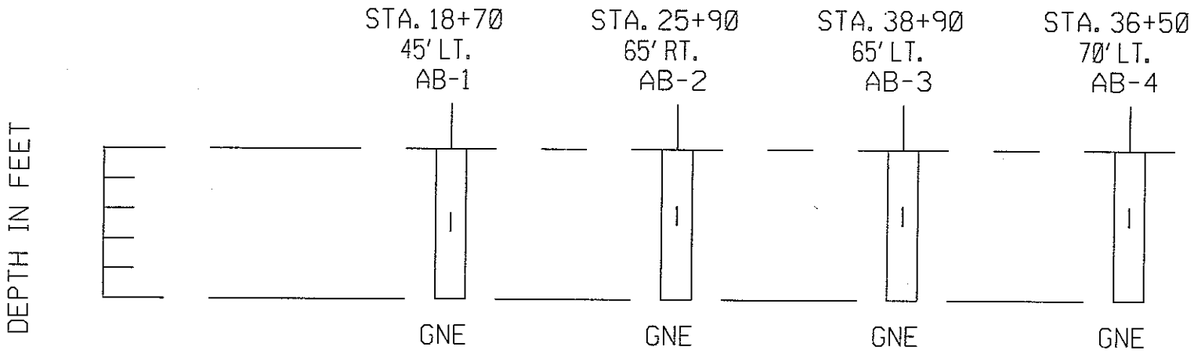
No 00003684

RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS SOIL SURVEY DATA

SHEET NO.
17



LEGEND

I	Light gray to dark brown fine SAND to slightly silty fine sand, (A-3)
(A-3)	A.A.S.H.T.O. soil classification group symbol
GNE	Groundwater not encountered

REVISIONS		
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RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS SOIL SURVEY DATA

SHEET NO. 18

SECTION : 24
TOWNSHIP : 21 SOUTH
RANGE: 30 EAST
SUBMITTED BY : MUSTAPHA A. ABBOUD, P.E.

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION
MATERIALS AND RESEARCH

REPORT OF TESTS

DATE SURVEYED : 1/20/05
SURVEYED BY : PSI
DATE REPORTED: 2/2/05

	LBR TEST		ORGANIC CONTENT		MOISTURE CONTENT		SIEVE ANALYSIS RESULTS						ATTERBERG LIMITS					CORROSION TEST RESULTS					SUBSTRUCTURE ENVIRONMENTAL CLASSIFICATION	
STRATUM NO.	No. OF TESTS	LBR VALUE (%)	No. OF TESTS	% ORGANIC	No. OF TESTS	MOISTURE CONTENT	No. OF TESTS	% PASSING 10 MESH	% PASSING 40 MESH	% PASSING 60 MESH	% PASSING 100 MESH	% PASSING 200 MESH	NO. OF TESTS	LIQUID LIMIT	PLASTIC INDEX	AASHTO GROUP	DESCRIPTION	NO. OF TESTS	RESISTIVITY OHM-CM	CHLORIDES PPM	SULFATE PPM	pH	CONCRETE	STEEL
1	-	-	-	-	-	-	4	94-99	89-97	79-88	20-35	5-10	-	NP	NP	A-3	LIGHT GRAY TO DARK BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND	-	-	-	-	-	-	-

NOTES:

(1) STRATA BOUNDARIES ARE APPROXIMATE AND REPRESENT SOIL STRATA AT EACH TEST HOLE LOCATION ONLY. ANY STRATUM CONNECTING LINES SHOWN ARE FOR ESTIMATING EARTHWORK ONLY AND DO NOT INDICATE ACTUAL STRATUM LIMITS. SUBSURFACE VARIATIONS BETWEEN BORINGS SHOULD BE ANTICIPATED AS INDICATED IN SECTION 2-4. FOR FURTHER DETAILS SEE SECTION 120-3.

(2) IF THE SYMBOL "-" IS PRESENT, IT REPRESENTS UNMEASURED SOIL PARAMETERS.

(3) GNE INDICATES GROUNDWATER TABLE NOT ENCOUNTERED WITHIN THE DEPTH OF THE BORING.

(4) THE MATERIAL FROM STRATUM 1 APPEARS SATISFACTORY FOR USE IN THE EMBANKMENT WHEN UTILIZED IN ACCORDANCE WITH INDEX NO. 505.

(5) THE SYMBOL "NP" REPRESENTS NON-PLASTIC.

REVISIONS		
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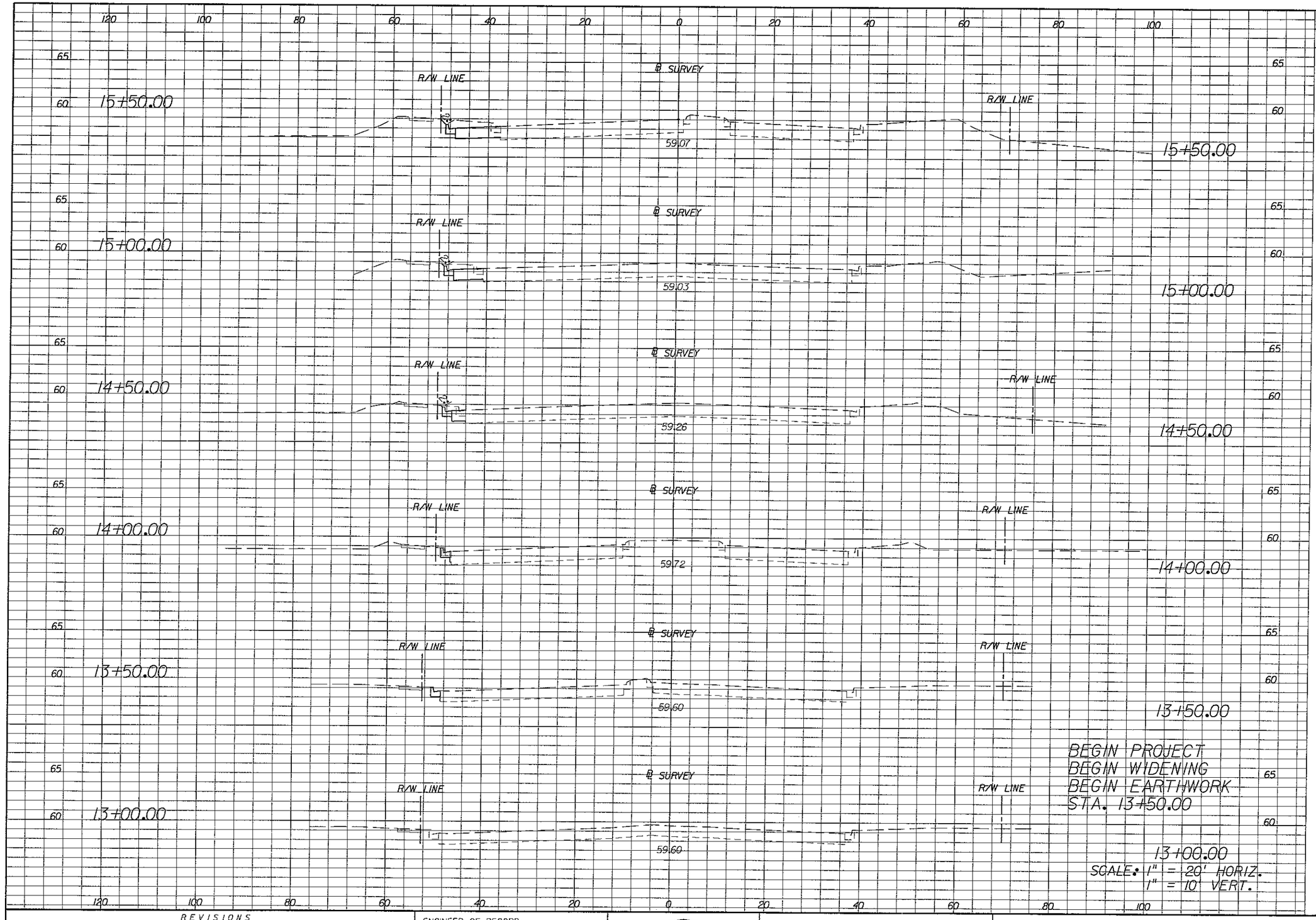
RED BUG LAKE ROAD AND TUSKAWILLA ROAD
INTERSECTION IMPROVEMENTS
SOIL SURVEY DATA

SHEET NO.
19

Regular Exc.		Embankment	
A	V	A	V



REVISIONS		
DATE	BY	DESCRIPTION

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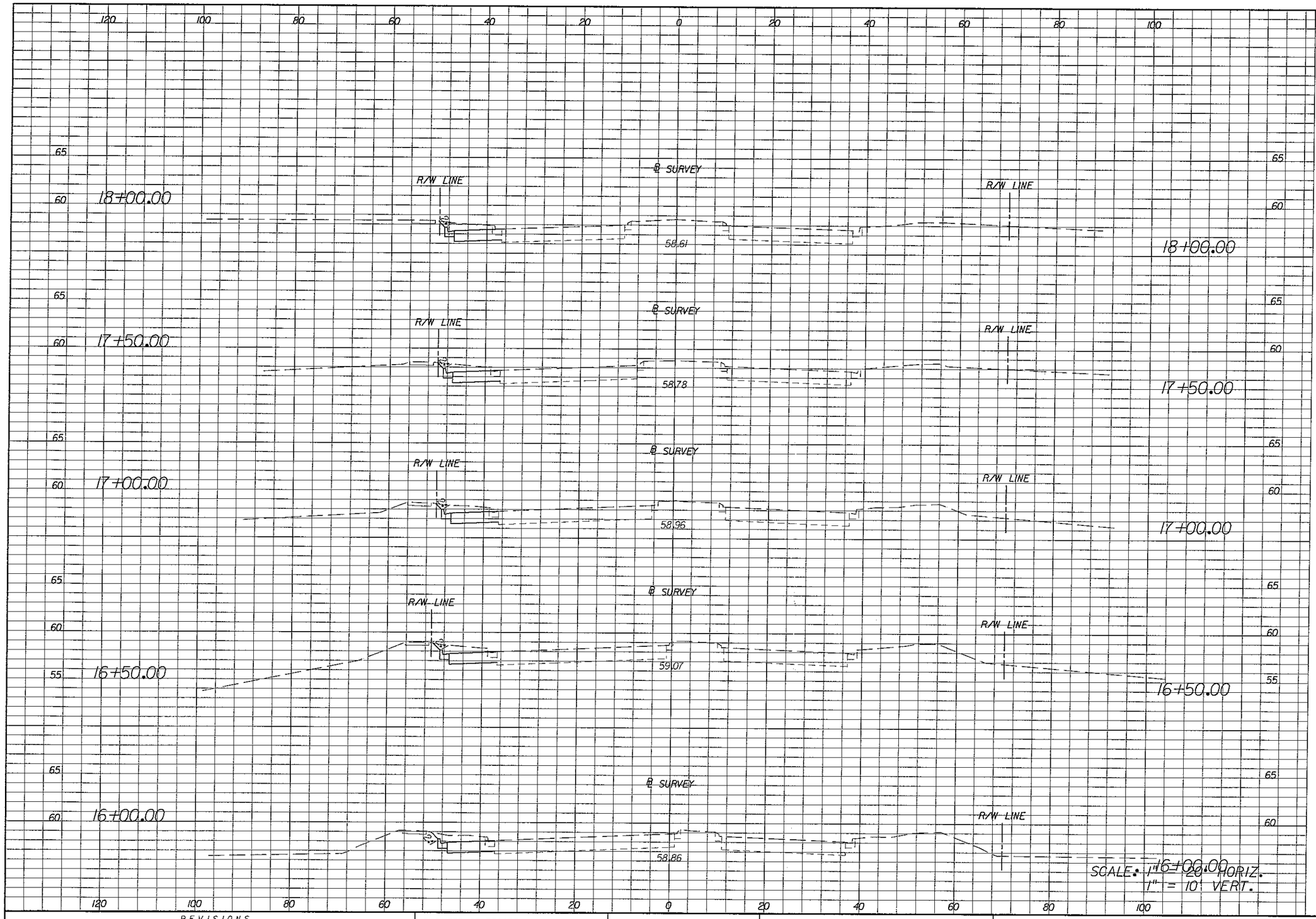
RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS
RED BUG LAKE ROAD CROSS SECTIONS

SHEET NO. 20



Regular Exc.		Embankment	
A	V	A	V

REVISIONS		
DATE	BY	DESCRIPTION

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RED BUG LAKE ROAD CROSS SECTIONS

SHEET NO. 21

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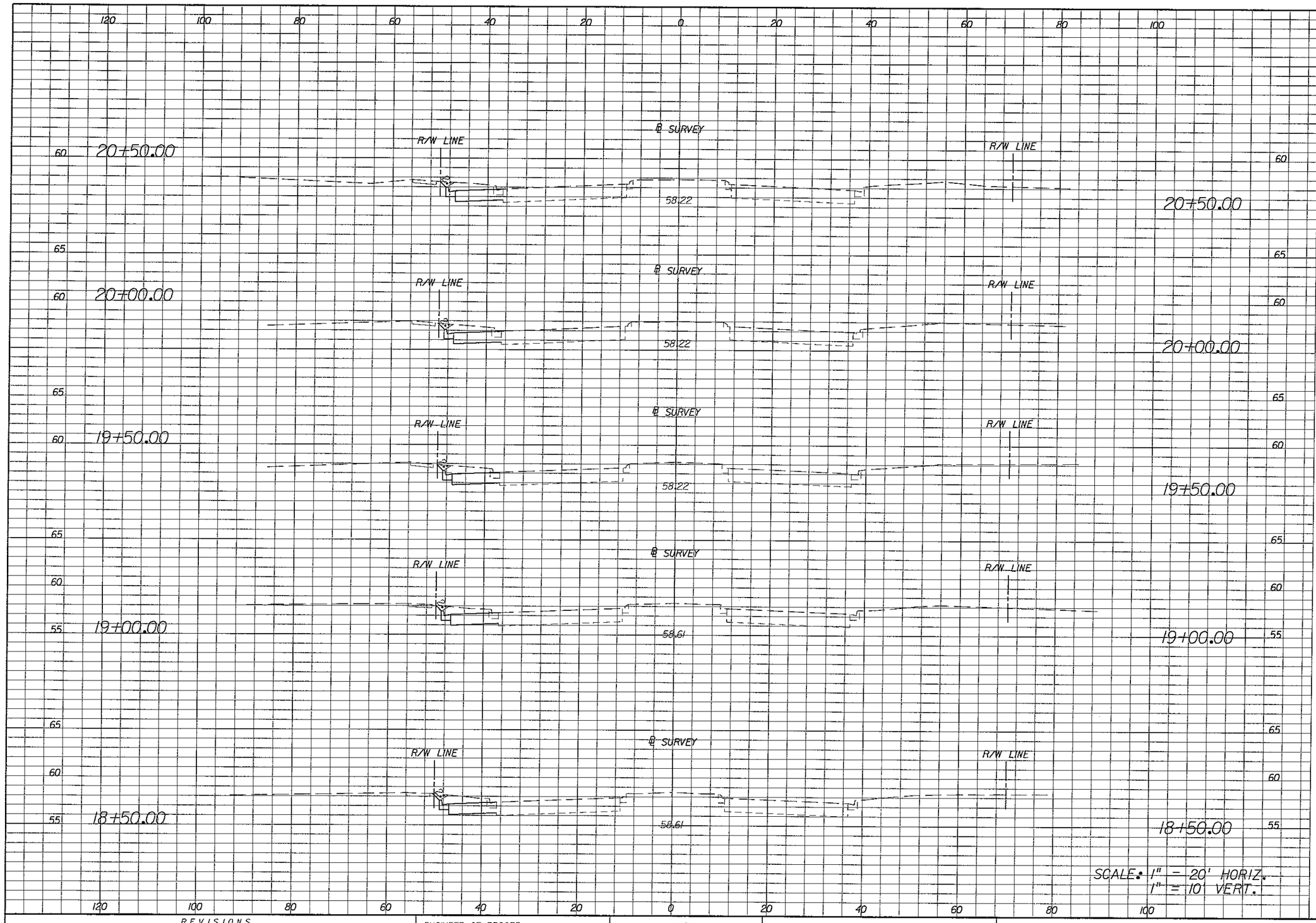

Regular Exc.		Embankment	
A	V	A	V

REVISIONS		
DATE	BY	DESCRIPTION

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RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS
RED BUG LAKE ROAD CROSS SECTIONS

SHEET NO. 22

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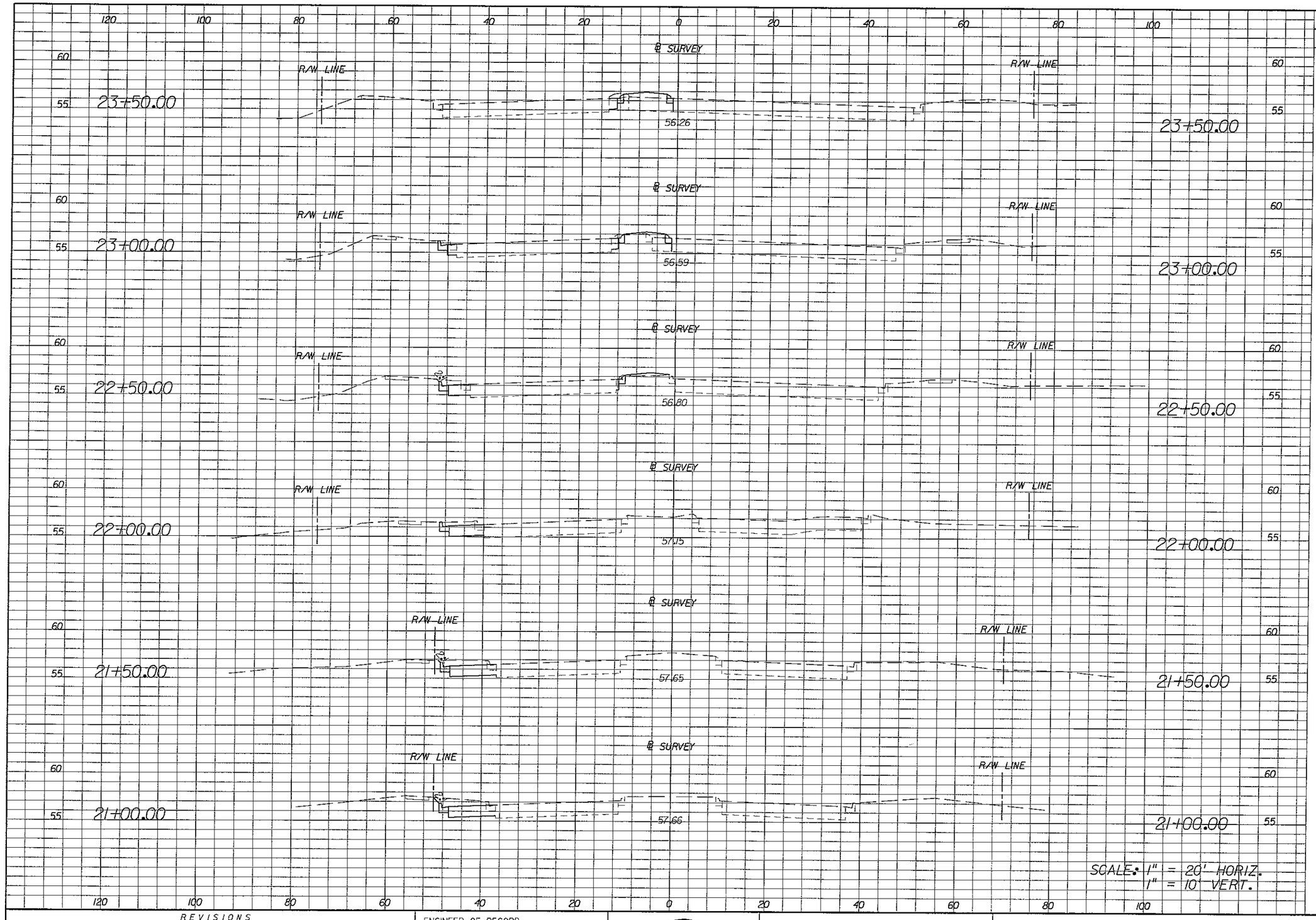

Regular Exc.		Embankment	
A	V	A	V

REVISIONS		
DATE	BY	DESCRIPTION

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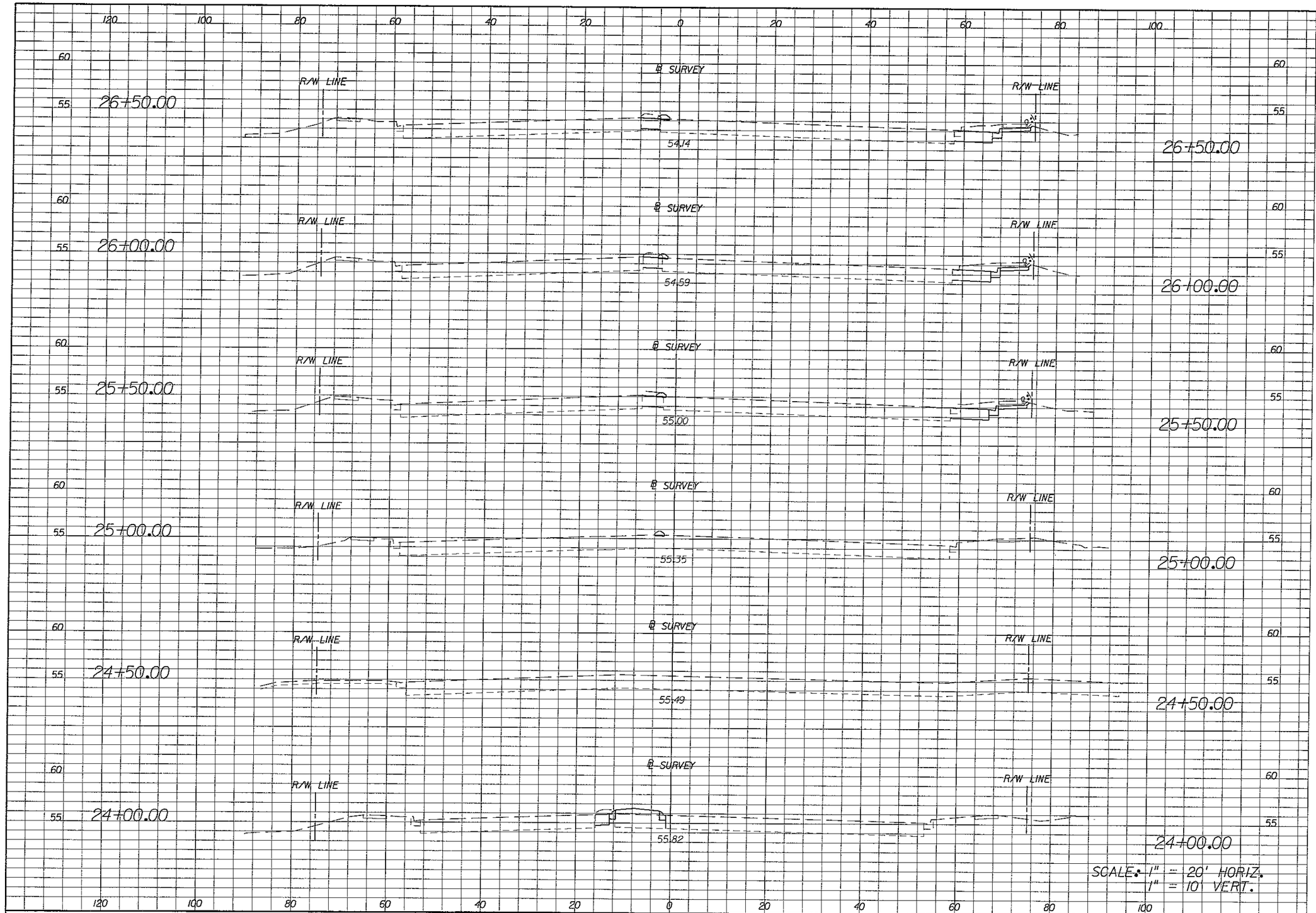
RED BUG LAKE ROAD CROSS SECTIONS

SHEET NO. 23



Regular Exc.		Embankment	
A	V	A	V

REVISIONS		
DATE	BY	DESCRIPTION

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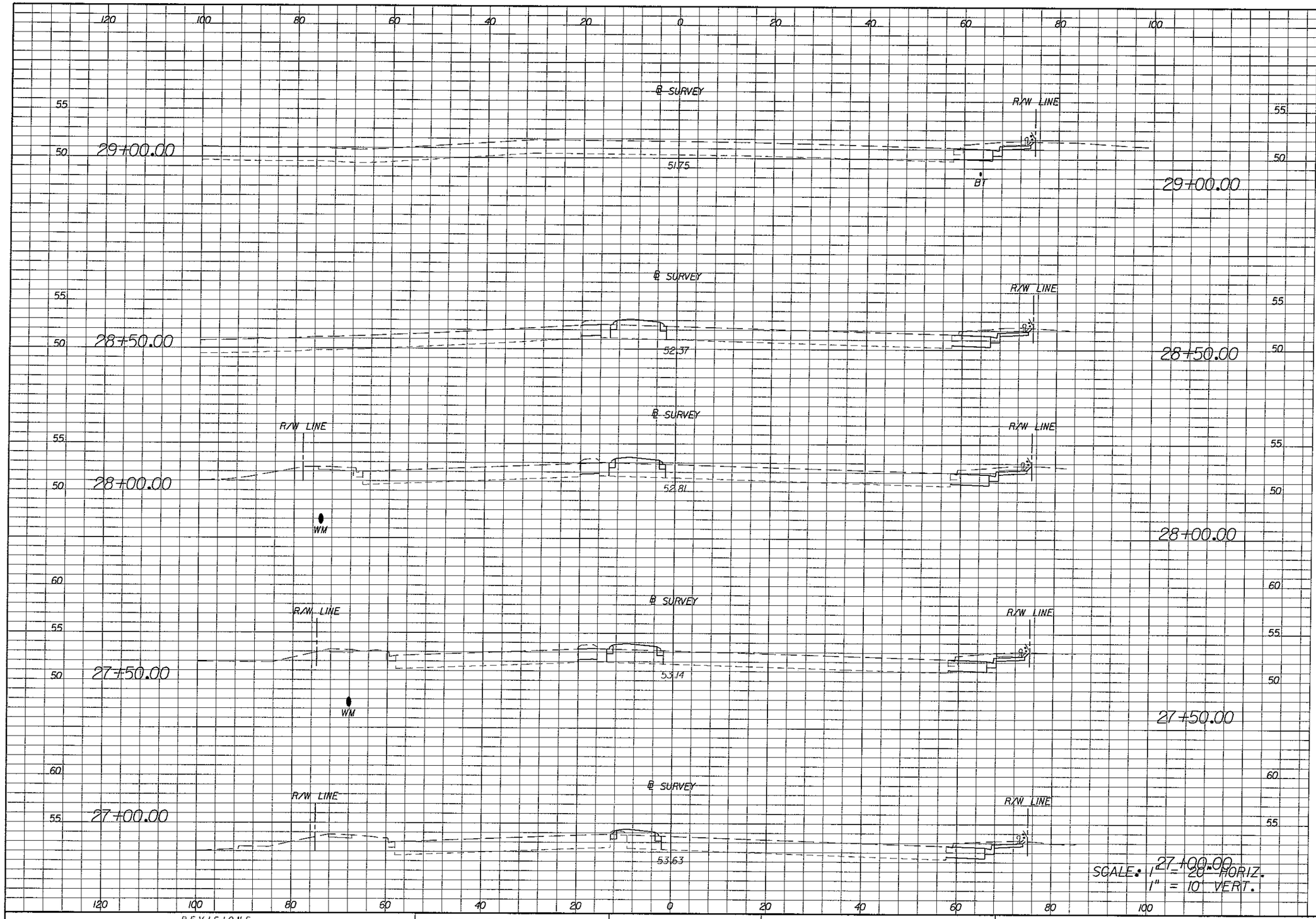
RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS
RED BUG LAKE ROAD CROSS SECTIONS

SHEET NO.
24

$FILE$ $DATE$ $TIME$



Regular Exc.		Embankment	
A	V	A	V

SCALE: 1" = 20' HORIZ.
1" = 10' VERT.

REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
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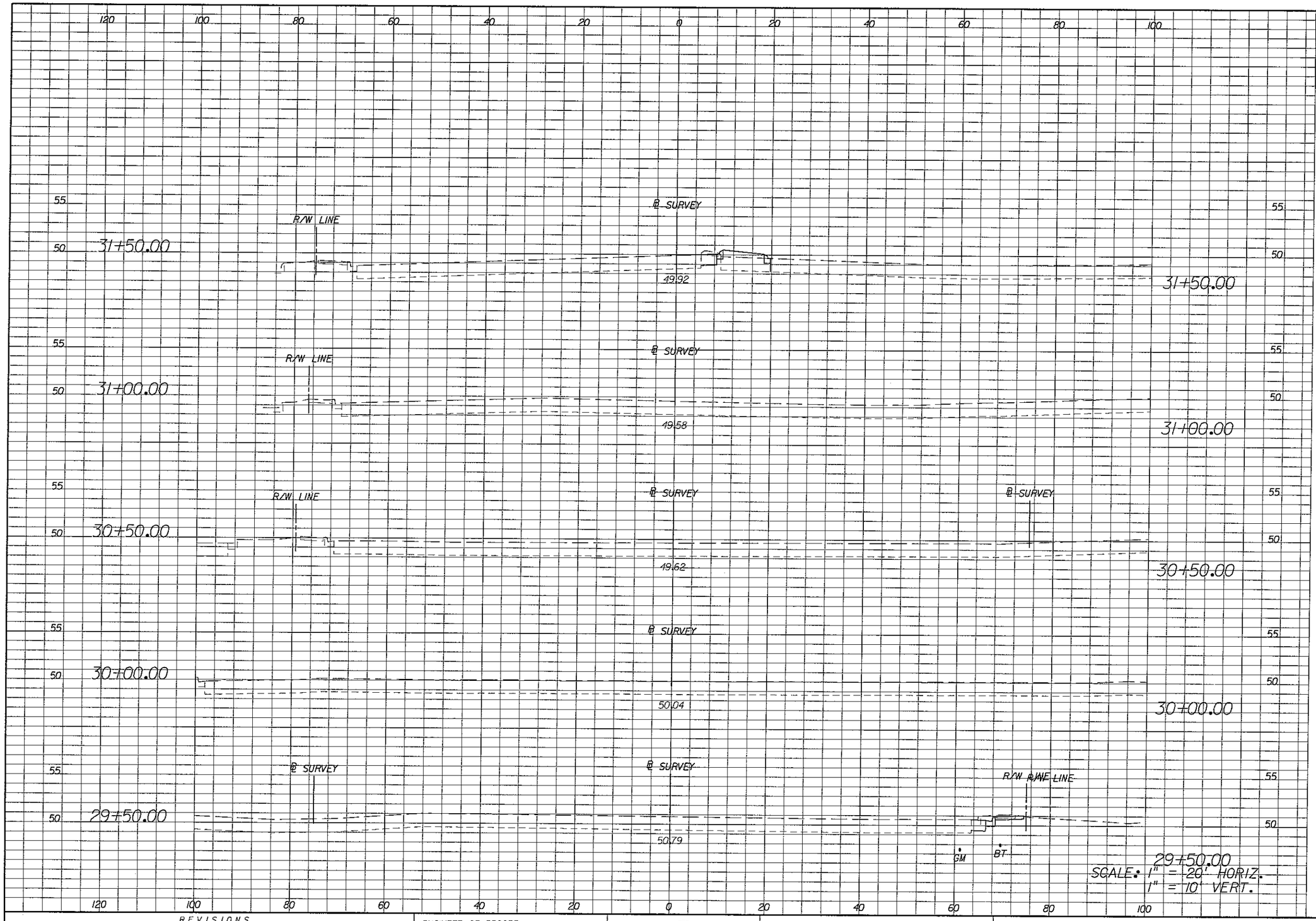
RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS
RED BUG LAKE ROAD CROSS SECTIONS

SHEET NO.
25



Regular Exc.		Embankment	
A	V	A	V

REVISIONS		
DATE	BY	DESCRIPTION

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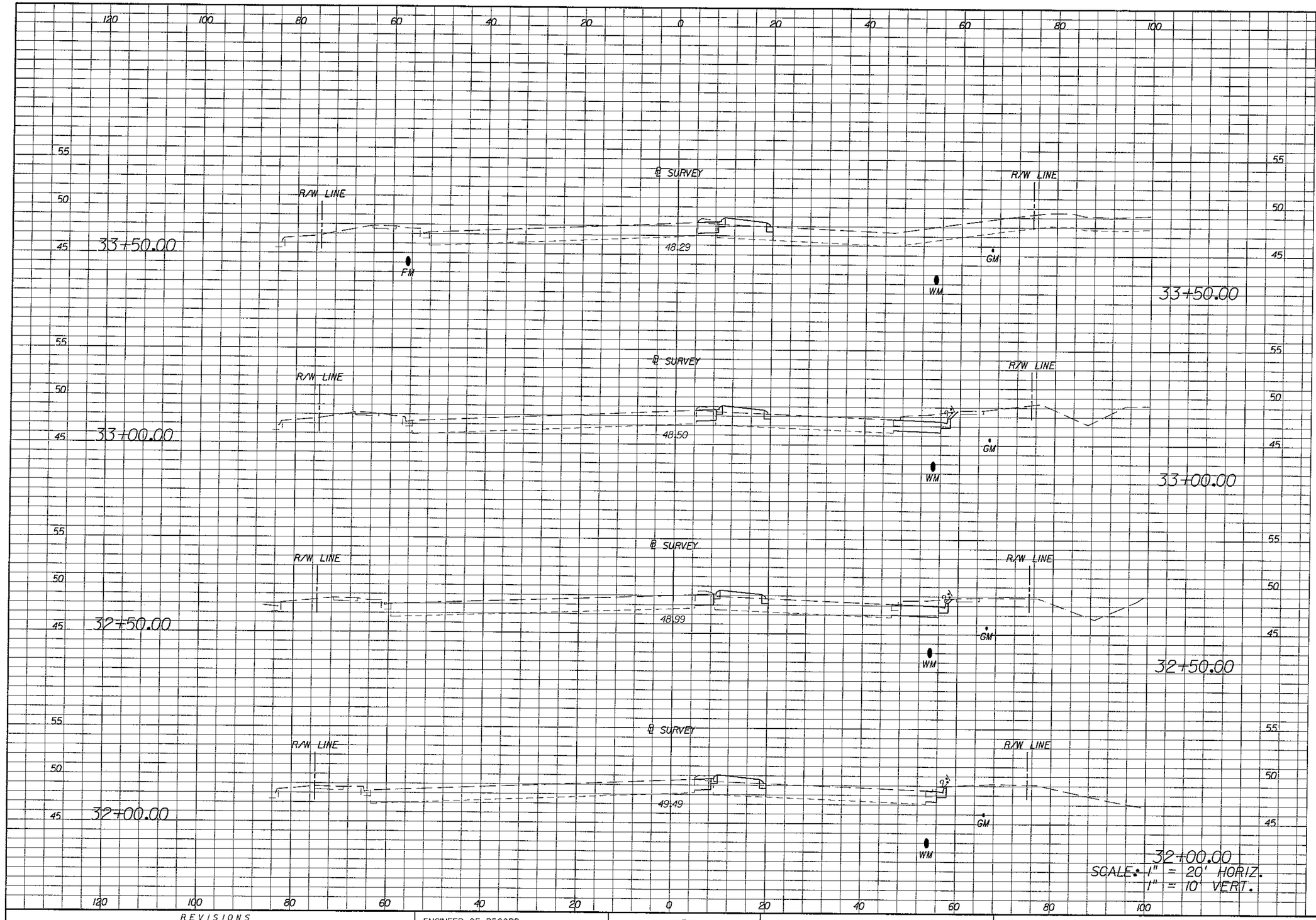
RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS
RED BUG LAKE ROAD CROSS SECTIONS

SHEET NO. 26

Regular Exc.		Embankment	
A	V	A	V



SCALE: 1" = 20' HORIZ.
1" = 10' VERT.

REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FURSAN S MUNJED, P E
PROFESSIONAL ENGINEER CERTIFICATE NO 51446
PROFESSIONAL ENGINEERING CONSULTANTS, INC
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RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS
RED BUG LAKE ROAD CROSS SECTIONS

SHEET NO. 27

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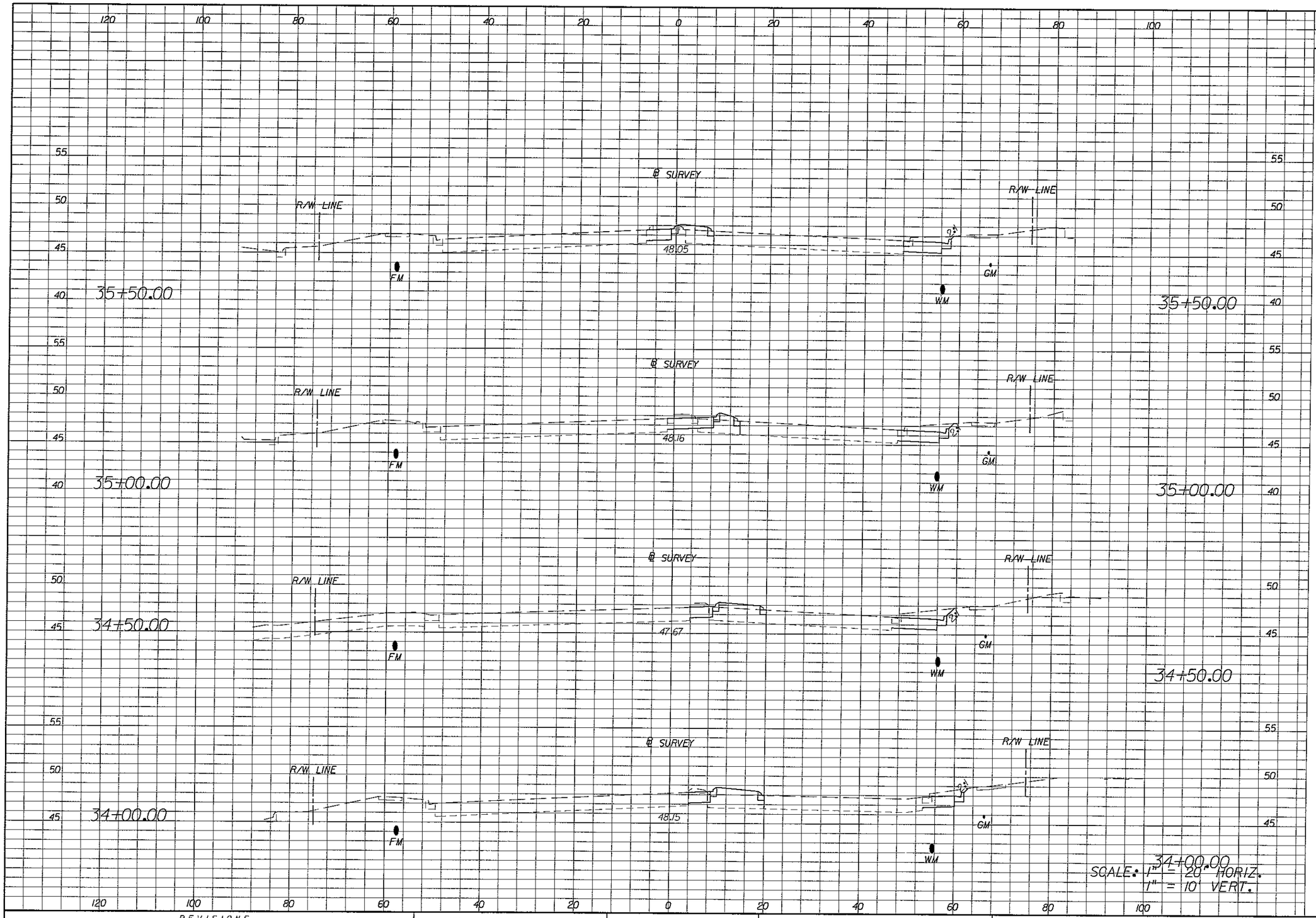

Regular Exc.		Embankment	
A	V	A	V

REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FURSAN S. MUNJED, P.E.
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RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS
RED BUG LAKE ROAD CROSS SECTIONS

SHEET NO.
28

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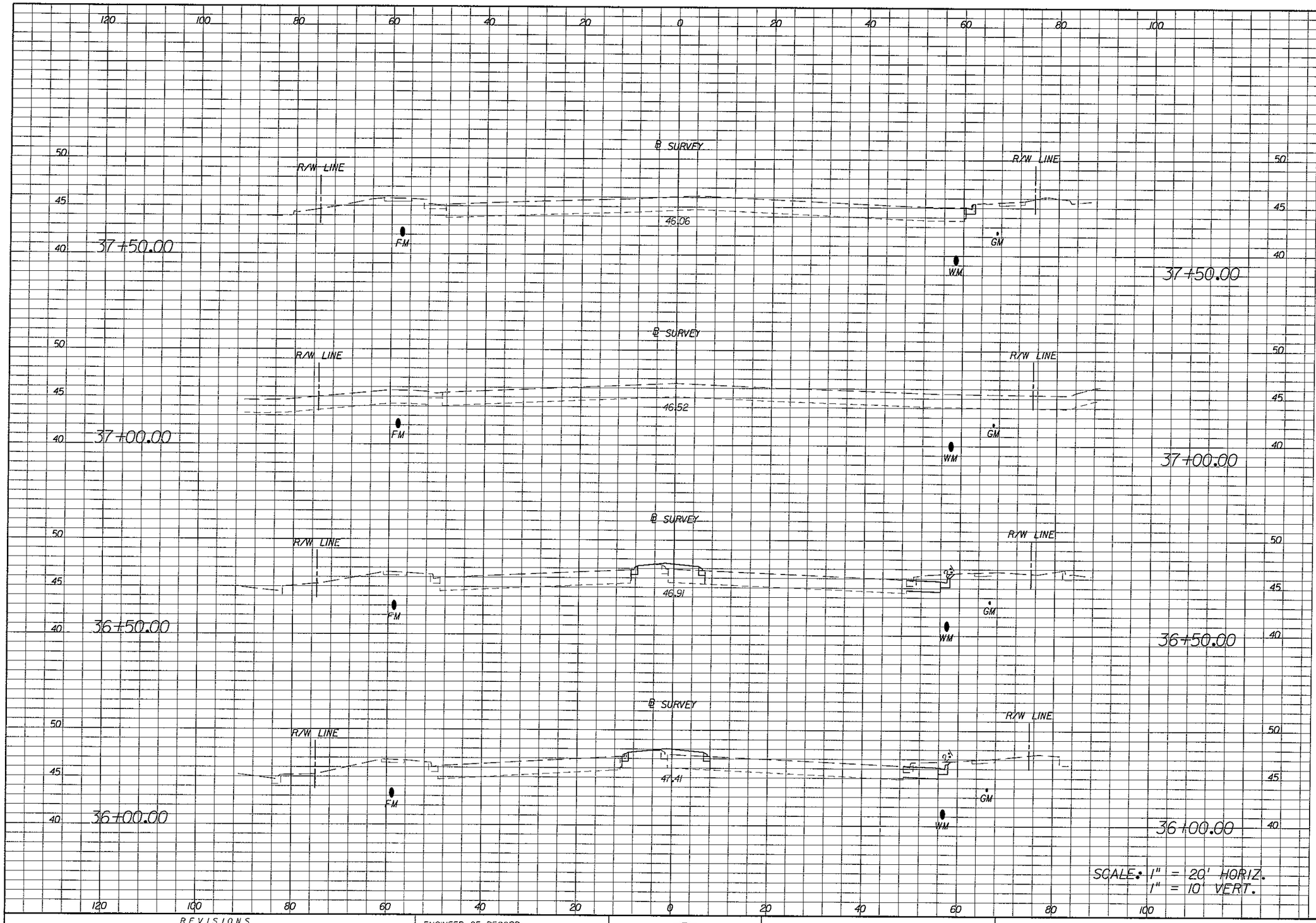

Regular Exc.		Embankment	
A	V	A	V

SCALE: 1" = 20' HORIZ.
1" = 10' VERT.

REVISIONS		
DATE	BY	DESCRIPTION

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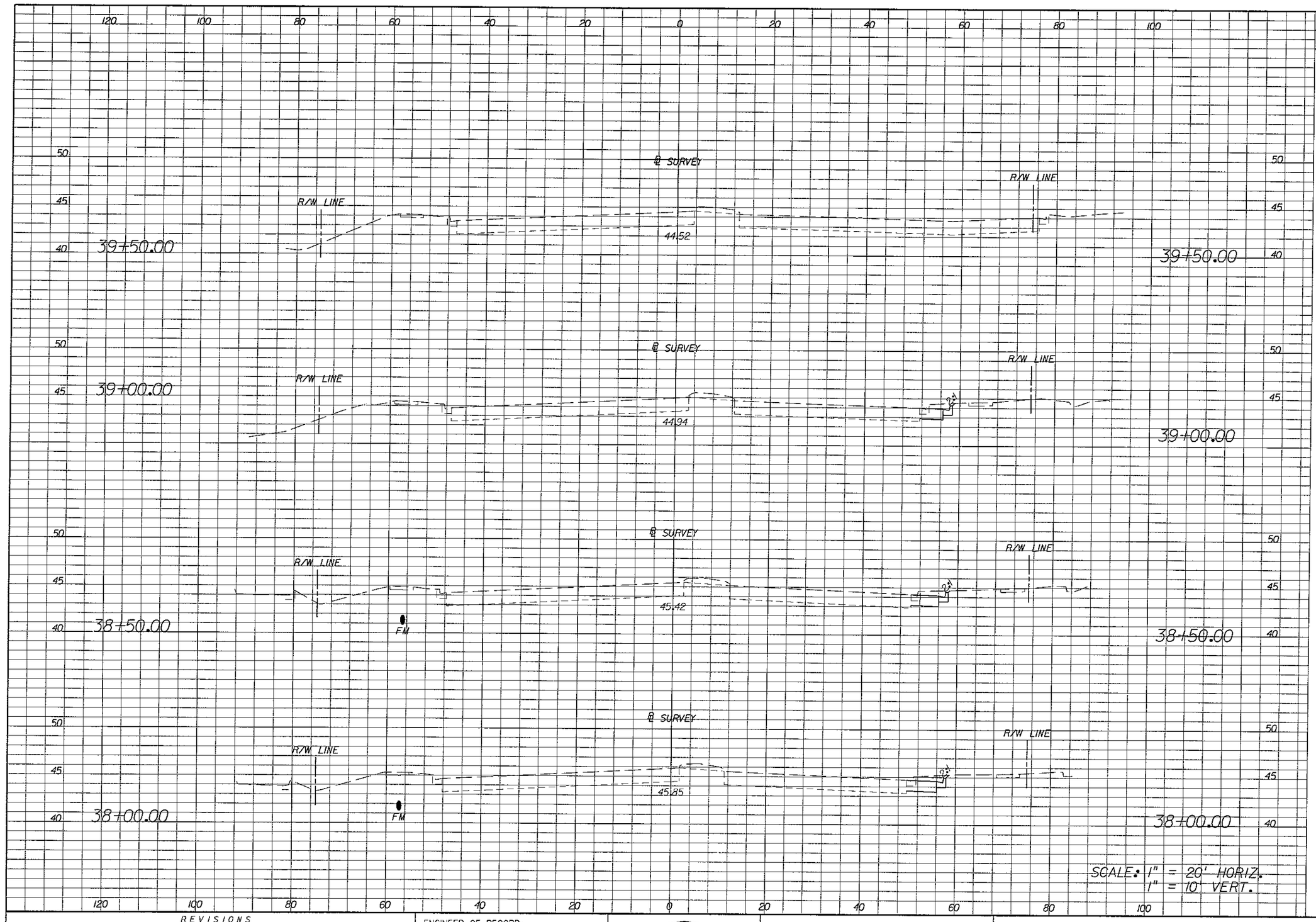
RED BUG LAKE ROAD CROSS SECTIONS

SHEET NO. 29

Regular Exc.		Embankment	
A	V	A	V



REVISIONS		
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ENGINEER OF RECORD:
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RED BUG LAKE ROAD CROSS SECTIONS

SHEET NO.
30

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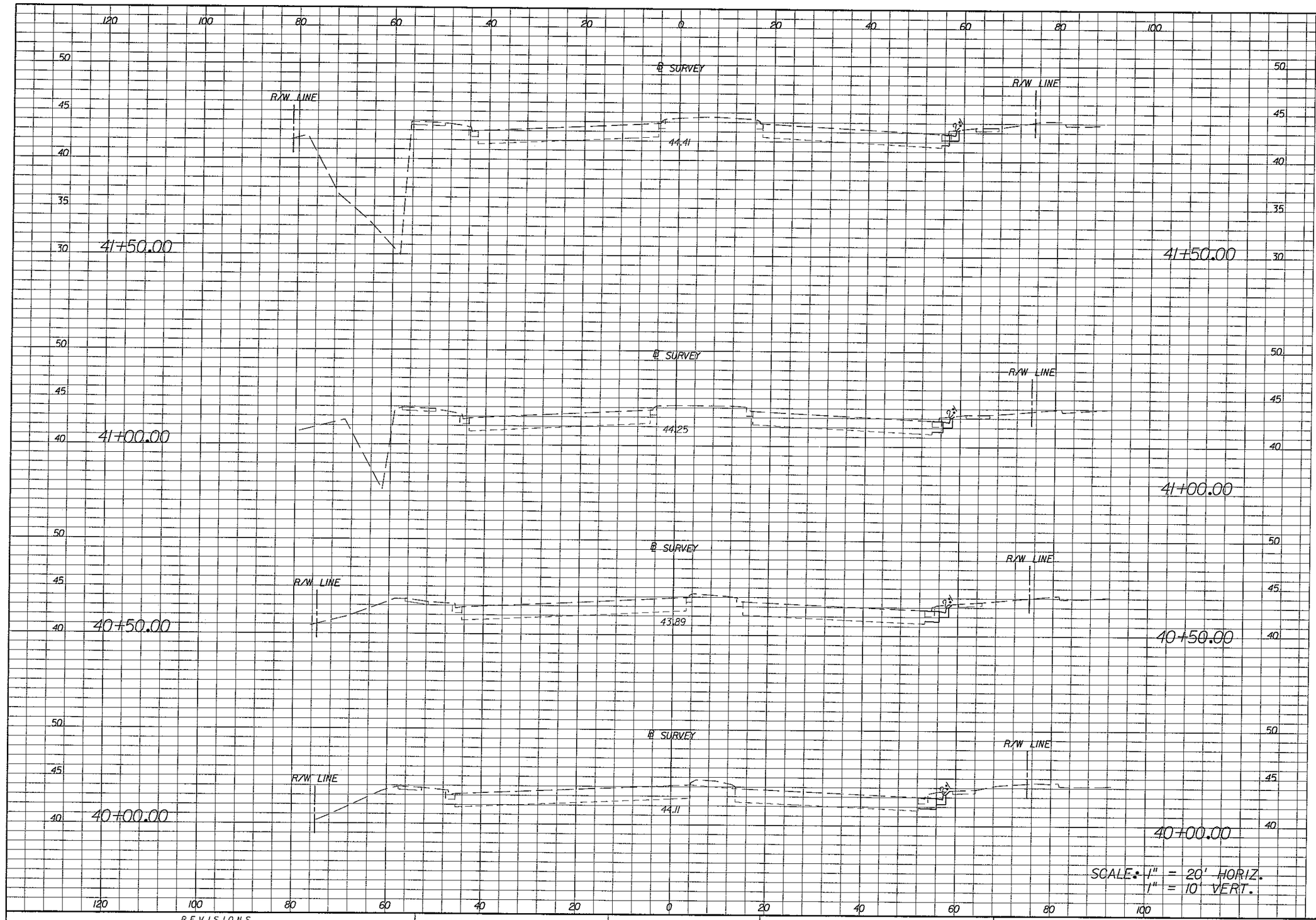

Regular Exc.		Embankment	
A	V	A	V

REVISIONS		
DATE	BY	DESCRIPTION

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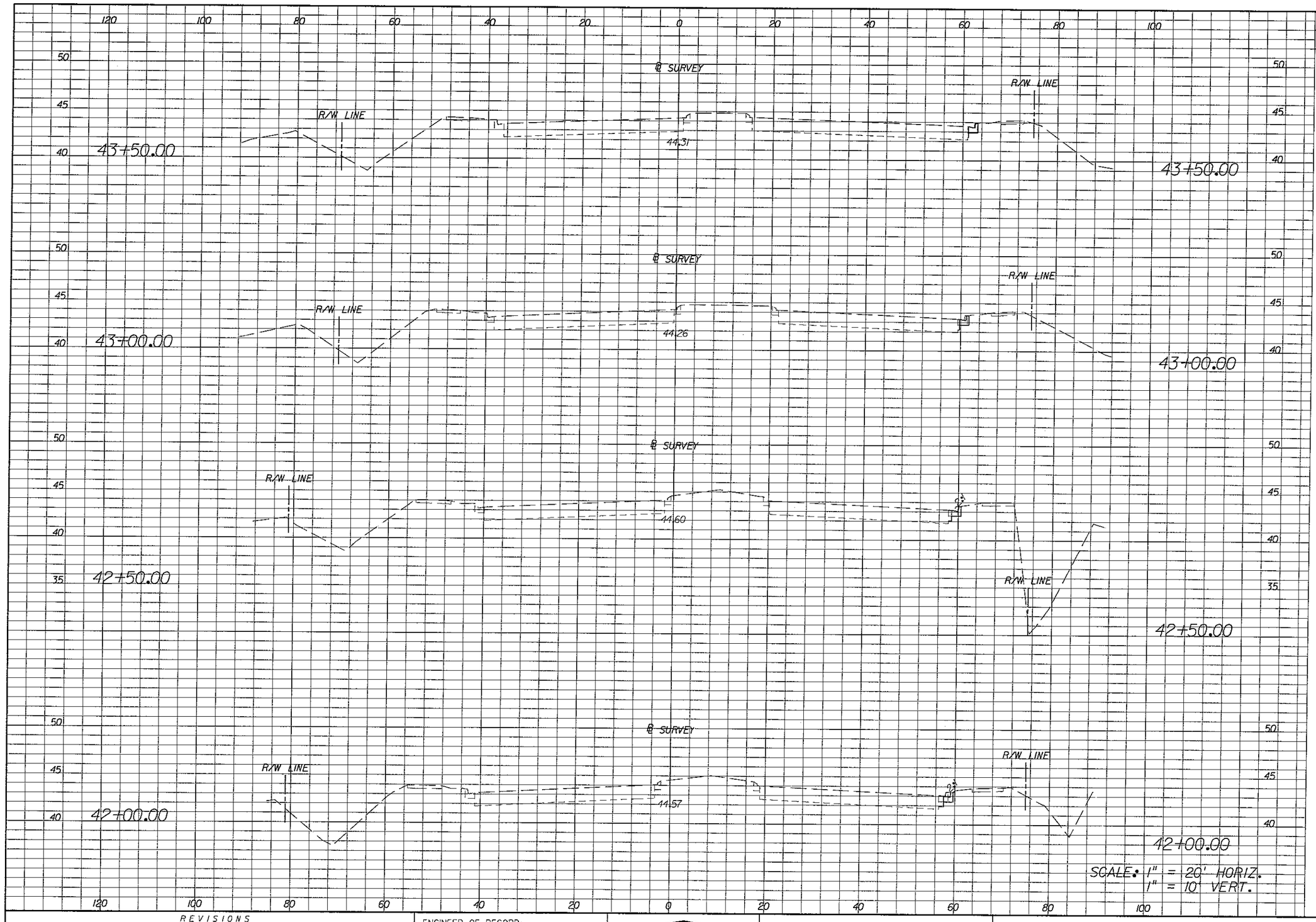
RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS
RED BUG LAKE ROAD CROSS SECTIONS

SHEET NO. 31



Regular Exc.		Embankment	
A	V	A	V

REVISIONS		
DATE	BY	DESCRIPTION

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RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS
RED BUG LAKE ROAD CROSS SECTIONS

SHEET NO. 32

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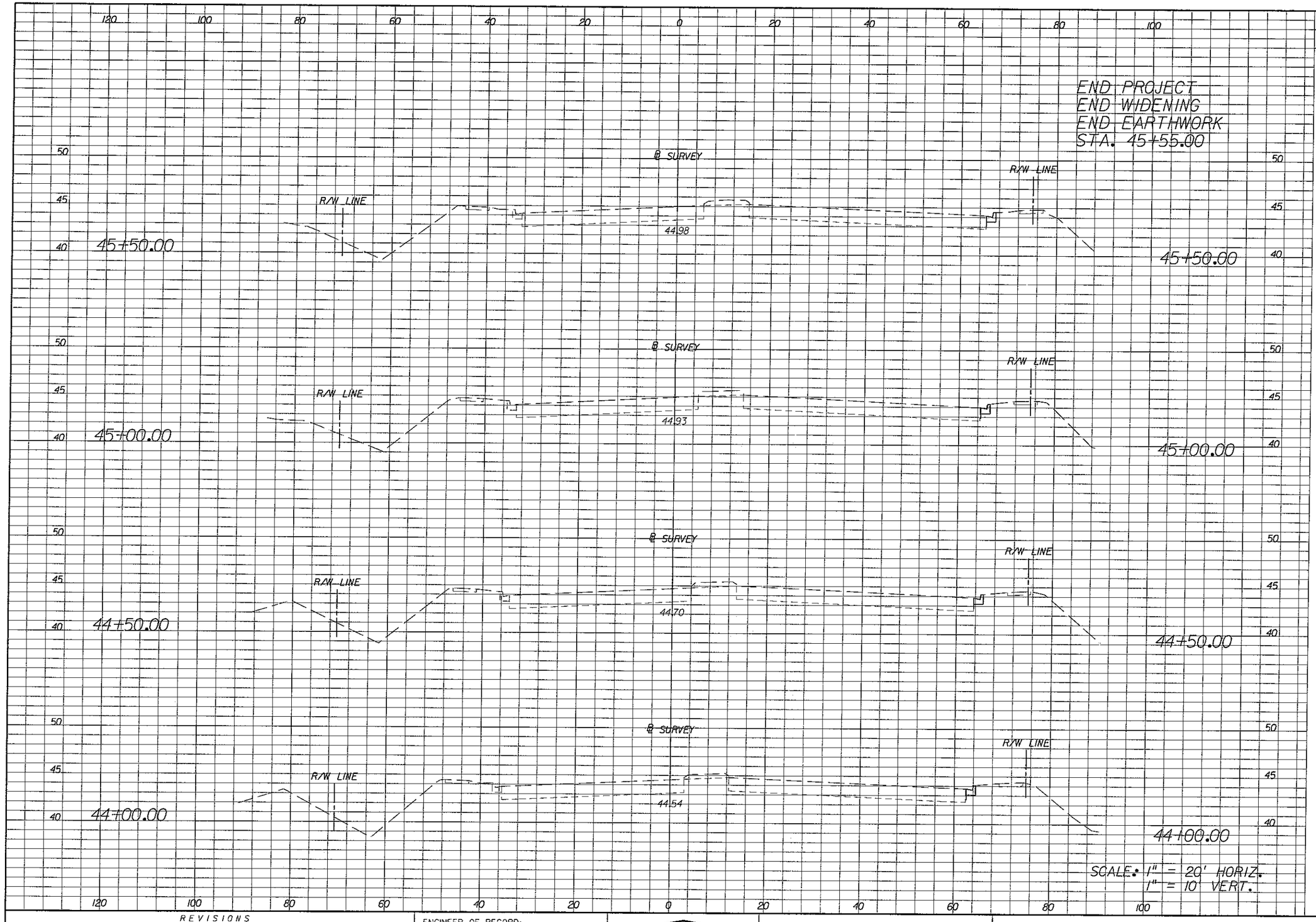
Regular Exc.		Embankment	
A	V	A	V



REVISIONS		
DATE	BY	DESCRIPTION

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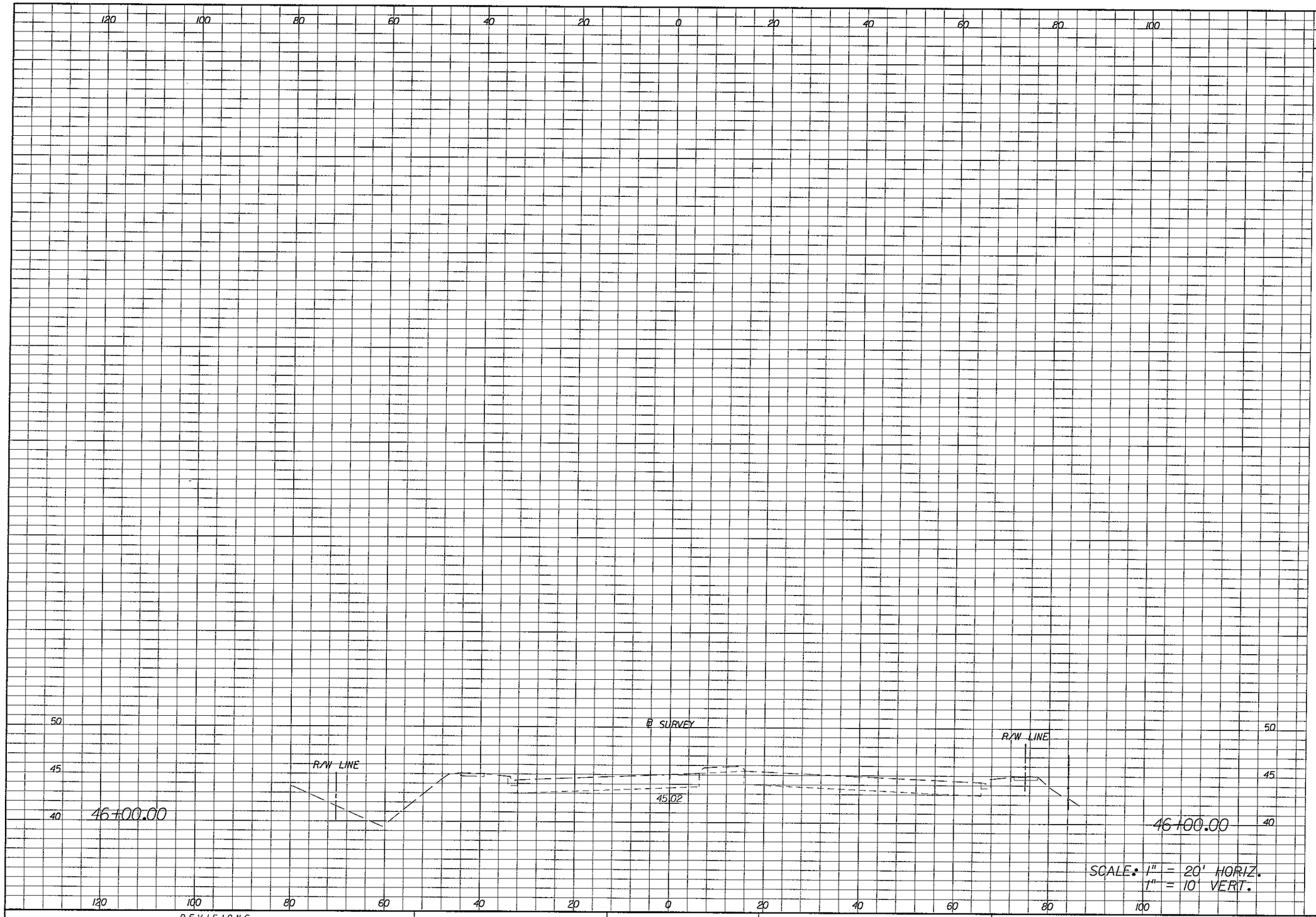
RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS
RED BUG LAKE ROAD CROSS SECTIONS

SHEET NO.
33



Regular Exc.		Embankment	
A	V	A	V

REVISIONS		
DATE	BY	DESCRIPTION

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RED BUG LAKE ROAD CROSS SECTIONS

SHEET NO. 34

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Regular Exc.		Embankment	
A	V	A	V

120 100 80 60 40 20 0 20 40 60 80 100

℄ SURVEY — R/W LINE — R/W LINE

55 / 50 — 155+00.00 — 51.60 — 155+00.00

℄ SURVEY — R/W LINE — R/W LINE

55 / 50 — 154+50.00 — 50.88 — 154+50.00

℄ SURVEY — R/W LINE — R/W LINE

55 / 50 — 154+00.00 — 50.68 — 154+00.00

℄ SURVEY — R/W LINE — R/W LINE

55 / 50 — 153+50.00 — 50.50 — 153+50.00

℄ SURVEY — R/W LINE — R/W LINE

55 / 50 — 153+00.00 — 50.70 — 153+00.00

BEGIN WIDENING
BEGIN EARTHWORK
STA. 152+90.00

℄ SURVEY — R/W LINE — R/W LINE

55 / 50 — 152+50.00 — 51.00 — 152+50.00

BEGIN PROJECT
STA. 148+00.00

SCALE: 1" = 20' HORIZ.
1" = 10' VERT.

120 100 80 60 40 20 0 20 40 60 80 100

REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
FURSAN S. MUNJED, P.E.
PROFESSIONAL ENGINEER CERTIFICATE NO 51446
PROFESSIONAL ENGINEERING CONSULTANTS, INC
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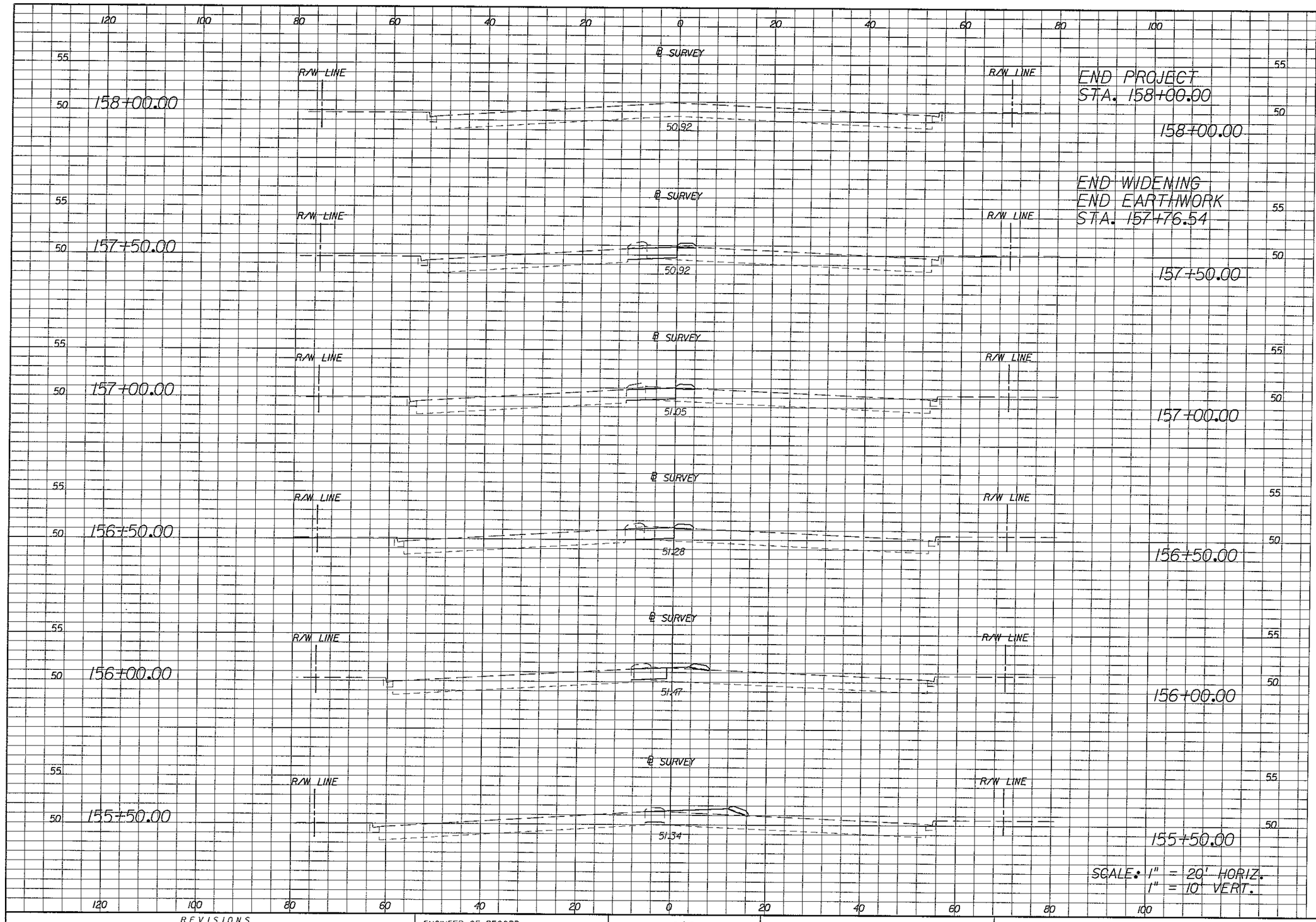
CERTIFICATE OF AUTHORIZATION NO 3556

SEMINOLE COUNTY
FLORIDA'S NATURAL CHOICE

PEC
PROFESSIONAL ENGINEERING CONSULTANTS, INC.
engineers planners surveyors

RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS
TUSKAWILLA ROAD CROSS SECTIONS

SHEET NO. 35



Regular Exc.		Embankment	
A	V	A	V

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RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS
TUSKAWILLA ROAD CROSS SECTIONS

SHEET NO. 36

GENERAL NOTES

1. THE CONTRACTOR SHALL ADHERE TO THE REQUIREMENTS SET FORTH IN THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) LATEST PUBLISHED EDITION, CHAPTER VI AND TRAFFIC DESIGN STANDARDS LATEST PUBLISHED EDITION AT ALL TIMES.

2. ALL TRAFFIC CONTROL DEVICES (TEMPORARY SIGNS, PAVEMENT MARKINGS, BARRIER WALL, ETC.) REQUIRED DURING A CONSTRUCTION PHASE SHALL BE INSTALLED AND APPROVED BY THE TRAFFIC OPERATION ENGINEER PRIOR TO THE COMMENCEMENT OF CONSTRUCTION AND WILL BE MAINTAINED IN ACCORDANCE WITH MUTCD (DEFER TO INDEX 600 IF CASE IS NOT COVERED IN MUTCD). INDEX 600 SHALL BE USED IN CONJUNCTION WITH ALL OTHER INDEXES SPECIFICALLY MENTIONED IN EACH TRAFFIC CONTROL PHASE.

3. ALL EXISTING SIGNS AND PAVEMENT MARKINGS WHICH CONFLICT WITH THE TRAFFIC CONTROL PLAN DURING A CONSTRUCTION PHASE SHALL BE REMOVED OR TEMPORARILY RELOCATED AS NECESSARY PRIOR TO COMMENCEMENT OF CONSTRUCTION. THE COST OF REMOVING AND/OR REPLACING SIGNS AND PAVEMENT MARKINGS FOR MAINTENANCE OF TRAFFIC SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 999-01.

4. ALL SIGNS 48" X 48" OR LARGER SHALL BE MAINTAINED ON TWO (2) BREAKAWAY SUPPORTS OR YIELDING POSTS AS SHOWN IN FIGURE 6-1 OF THE MUTCD. THE CONTRACTOR SHALL USE THE MUTCD TO DETERMINE THE APPROPRIATE PLACEMENT AND ELEVATION OF CONTRUCTION SIGNS. REFLECTIVITY SHALL ADHERE TO THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION LATEST PUBLISHED EDITION.

5. THE CONTRACTOR SHALL INSTALL TEMPORARY REFLECTORIZED RAISED PAVEMENT MARKERS FOR EACH PHASE PER INDEX 600 SHEET 3 OF 10.

6. VEHICULAR ACCESS TO RESIDENCES AND BUSINESSES WILL BE MAINTAINED AT ALL TIMES.

7. LEFT TURN LANES WILL BE MAINTAINED AT ALL SIGNALIZED INTERSECTIONS.

8. MINIMUM LANE WIDTHS WILL BE ELEVEN (11) FEET FOR THROUGH LANES AND TEN (10) FEET FOR TURN LANES.

9. ALL OPERATIONS REQUIRING LANE CLOSURES SHALL BE SUBMITTED TO THE SEMINOLE COUNTY TRAFFIC OPERATIONS ENGINEER WITH LANE CLOSURE DATA SHEETS AS REQUIRED BY FDOT.

10. PRIOR TO COMMENCING CONSTRUCTION, THE CONTRACTOR WILL CONTACT THE SEMINOLE COUNTY TRAFFIC OPERATIONS ENGINEER (407) 665-2500 EXTENSION 5677 TO MODIFY THE SIGNALIZATION TO FIXED TIMINGS. SEMINOLE COUNTY TRAFFIC OPERATIONS WILL BE RESPONSIBLE FOR ESTABLISHING THE FIXED TIMING FOR THE SIGNAL. ANY SPEED REDUCTIONS WILL BE NOTED ON THE M.O.T. PLANS FOR REVIEW AND APPROVAL. DRASTIC REDUCTIONS IN SPEED LIMITS WILL BE AVOIDED.

11. AT SIGNALIZED INTERSECTIONS, SIGNAL HEADS SHALL BE RELOCATED OR REALIGNED AS REQUIRED TO THE CENTER OF THE RELOCATED LANES IN CONFORMANCE WITH THE MUTCD.

12. TRAVEL LANE TRANSITIONS THROUGH INTERSECTIONS AND TURN LANES SHALL BE MARKED WITH 2'-4' DOTTED GUIDELINES.

13. ATTENTION IS DIRECTED TO THE FACT THAT TEMPORARY CURB AND CONCRETE BARRIER MAY BE REQUIRED FOR DROP OFFS IN WORK ZONES AS PER INDEX 600 SHEET 5 OF 10. THE COST OF ANY TEMPORARY CURB OR BARRIER WALL WILL BE INCLUDED IN THE PRICE OF BID ITEM NO. 999-01.

14. TRAFFIC CONDITIONS, ACCIDENTS AND OTHER UNFORSEEN EMERGENCY CONDITIONS MAY REQUIRE THE TRAFFIC OPERATIONS ENGINEER TO MODIFY CHANNELIZATIONS. THE CONTRACTOR WILL MAKE THE NECESSARY ADJUSTMENTS AS DIRECTED BY THE TRAFFIC OPERATIONS ENGINEER WITHOUT DELAY.

15. TEMPORARY PAVEMENT SHALL CONSIST OF 6" LIMEROCK BASE OR AN EQUIVALENT COURSE AND 1 1/2" OF STRUCTURAL COURSE TYPE S OR AN EQUIVALENT APPROVED BY THE TRAFFIC OPERATIONS ENGINEER.

16. THE CONTRACTOR SHALL RETURN THE GROUND TO ITS CROSS SECTION (FINAL GRADE) AS APPROPRIATE WHEN REMOVING ANY TEMPORARY PAVEMENT.

17. THE CONTRACTOR WILL PROVIDE OFF DUTY LAW ENFORCEMENT OFFICER(S) TO BE USED FOR TRAFFIC CONTROL FOR MAJOR CHANGES IN TRAFFIC MOVEMENTS (INTERSECTION CHANGES ETC.) AS DIRECTED BY THE TRAFFIC OPERATIONS ENGINEER. COST SHALL BE INCLUDED IN THE BID PRICE FOR ITEM 999-01.

18. PROVISIONS APPROVED BY THE TRAFFIC OPERATIONS ENGINEER WILL BE MADE FOR THE REMOVAL OF STORM WATER FROM THE ROADWAY(S) DURING CONSTRUCTION.

19. ALL TEMPORARY MARKINGS SHALL BE IN PLACE ONE (1) HOUR BEFORE SUNSET.

20. ALL DEVICES WILL BE IN GOOD CONDITION. MINIMUM REFLECTIVE INTENSITY SHALL MEET THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION LATEST PUBLISHED EDITION.

21. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SIGNAL MAINTENANCE AT ALL SIGNALIZED INTERSECTIONS. PROPOSED SIGNAL HARDWARE MAY BE USED FOR TEMPORARY SIGNAL CONTROL TO THE EXTENT CONSTRUCTION PHASE OPERATIONS ALLOW. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO ALL PROPOSED SIGNAL HARDWARE DURING ITS TEMPORARY USE.

22. SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INCORPORATED TO INSURE THE AVOIDANCE OF SEDIMENT TRANSPORT FROM PROJECT SITE. MINIMUM MEASURES REQUIRED SHALL BE UTILIZED IN ACCORDANCE WITH FDOT INDEX NO. 102. SPECIFICALLY, HAY BALES AROUND ALL INLETS AND TURBIDITY BARRIERS AROUND OUTFALL MITERED END SECTIONS.

23. THE CONTRACTOR SHALL INSPECT ALL EXISTING DRAINAGE PIPES AND STRUCTURES TO BE UTILIZED WITHIN CONSTRUCTION LIMITS AND REMOVE ANY INTERNAL DEBRIS AND SAND/SILT THEREFROM.

MAINTENANCE OF TRAFFIC PLAN

1. THE CONTRACTOR SHALL CONFORM TO STANDARD INDEX 619 FOR ALL WORK WHERE POSSIBLE AND FOR ALL DAY ACTIVITIES.

2. ALL OTHER TASKS SHALL BE ACCOMPLISHED AT NIGHT UNDER THE TERMS OF THE LANE CLOSURE RESTRICTIONS SHOWN AND CONFORM TO THE INDEX 600 SERIES. THE COUNTY SHALL HAVE A MINIMUM OF 48 HOURS NOTICE WITH SCHEDULE OF THE TASKS TO BE PERFORMED FOR ALL LANE CLOSURES.

3. WHENEVER SIGNAL WORK IS BEING PERFORMED AT AN INTERSECTION (INSTALLING CONDUIT IN THE STREET, REMOVING EXISTING SIGNAL EQUIPMENT, INSTALLING NEW SIGNAL EQUIPMENT, INSTALLING LOOPS AND RUNS, AND TURNING ON NEW SIGNALS) WHERE A LANE IS CLOSED AN OFF-DUTY LAW ENFORCEMENT OFFICER SHALL DIRECT TRAFFIC. THE COST OF THE OFF-DUTY LAW ENFORCEMENT OFFICER SHALL BE INCIDENTAL TO THE WORK AND WILL NOT BE PAID SEPARATELY. LANE CLOSURE RESTRICTIONS SHALL APPLY TO SUCH TASKS AS SHOWN.

LANE CLOSURE RESTRICTIONS	
LANE CLOSURE PERMITTED	8:00 PM TO 5:00 AM

4. THE CONTRACTOR SHALL HAVE AN IMSA LEVEL II CERTIFIED SIGNAL TECHNICIAN ON CALL WITHIN A MAXIMUM OF TWO HOURS RESPONSE TIME.

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SEMINOLE COUNTY
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engineers planners surveyors

RED BUG LAKE ROAD AND TUSKAWILLA ROAD
INTERSECTION IMPROVEMENTS
MAINTENANCE OF TRAFFIC

SHEET NO. 37

UTILITY OWNERS:

ELECTRIC - DISTRIBUTION/TRANSMISSION
MR. MIGUEL RODRIGUEZ
PROGRESS ENERGY, DISTRIBUTION
3300 EXCHANGE PL.
LAKE MARY, FL 32746
(407) 942-9358

WATER & SEWER
MS. PATTI LEVITI, SENIOR CIVIL ENGINEERING TECHNICIAN
SEMINOLE COUNTY ENVIRONMENTAL SERVICES
500 WEST LAKE MARY BOULEVARD
SANFORD, FL 32773
(407) 665-2132

S. SEMINOLE N. ORANGE COUNTY WASTEWATER TRANS. AUTHORITY
STEVE MILLER, P.E.
410 LAKE HOWELL RD.
MAITLAND, FL. 32751
(407) 628-3419

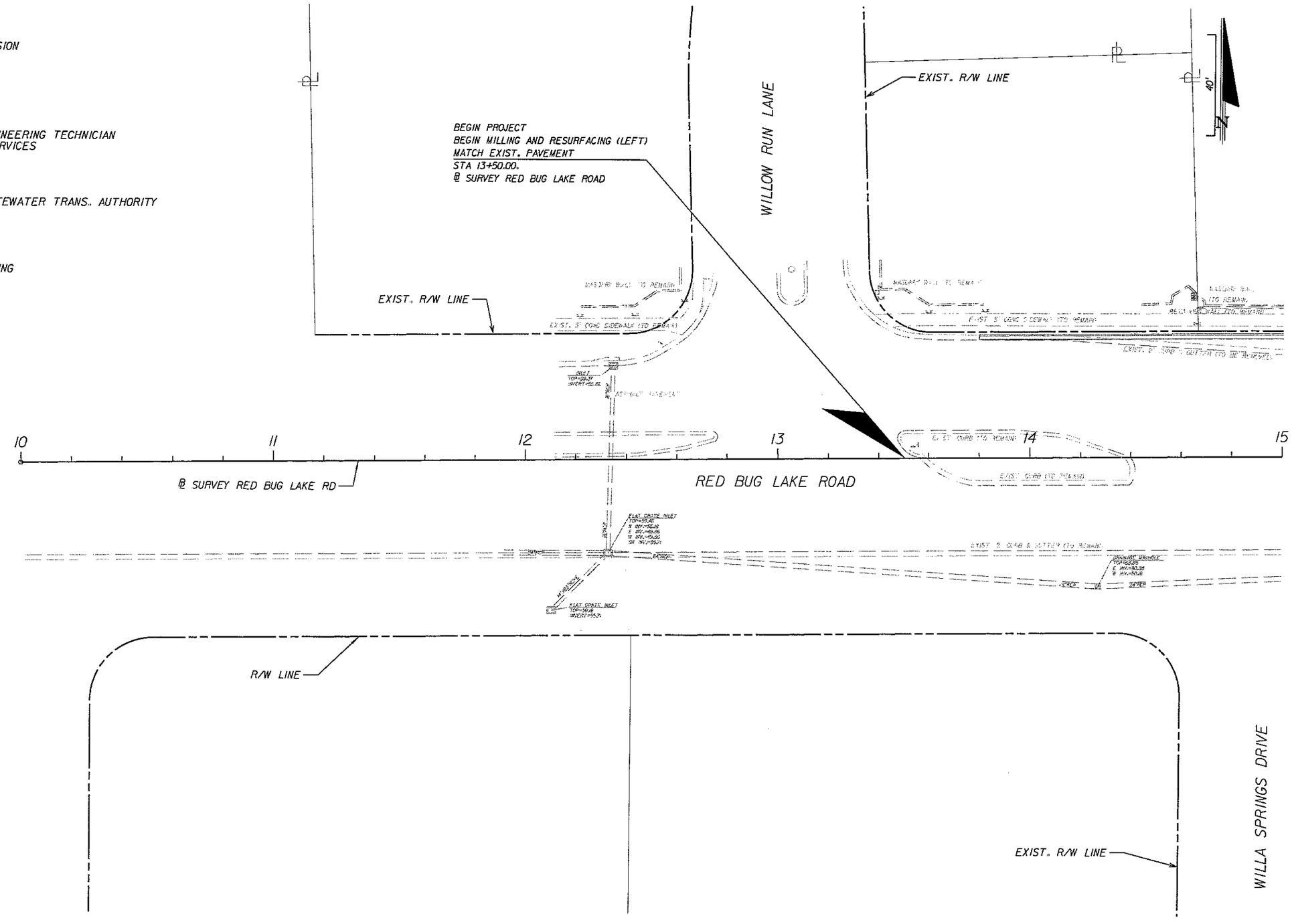
SEMINOLE COUNTY TRAFFIC ENGINEERING
GLENN YACUBCHIK
140 BUSH LOOP
SANFORD, FL. 32773
(407) 665-5677

COMMUNICATIONS
MR. RICHARD KENNEDY
SPRINT
952 FIRST STREET, MS-FLATH0101
ALTAMONTE SPRINGS, FL 32701
(407) 830-3428

COMMUNICATIONS
MR. JIM FARRELL
BELL SOUTH
450 NORTH GOLDENROD RD.
ORLANDO, FL 32807
(407) 273-5084

CABLE TV
MR. MARVIN USRY
BRIGHT HOUSE NETWORKS
844 MAGUIRE ROAD
OCOEE, FL 34761-2916
(407) 532-8509

GAS & PETROLEUM PRODUCTS
MR. CARLOS QUINTANA
TECO/PEOPLES GAS SYSTEM, INC.
600 WEST ROBINSON STREET
ORLANDO, FL 32801
(407) 420-2675



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RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS
UTILITY ADJUSTMENTS STA 10+00 TO STA 15+00

SHEET NO.
38

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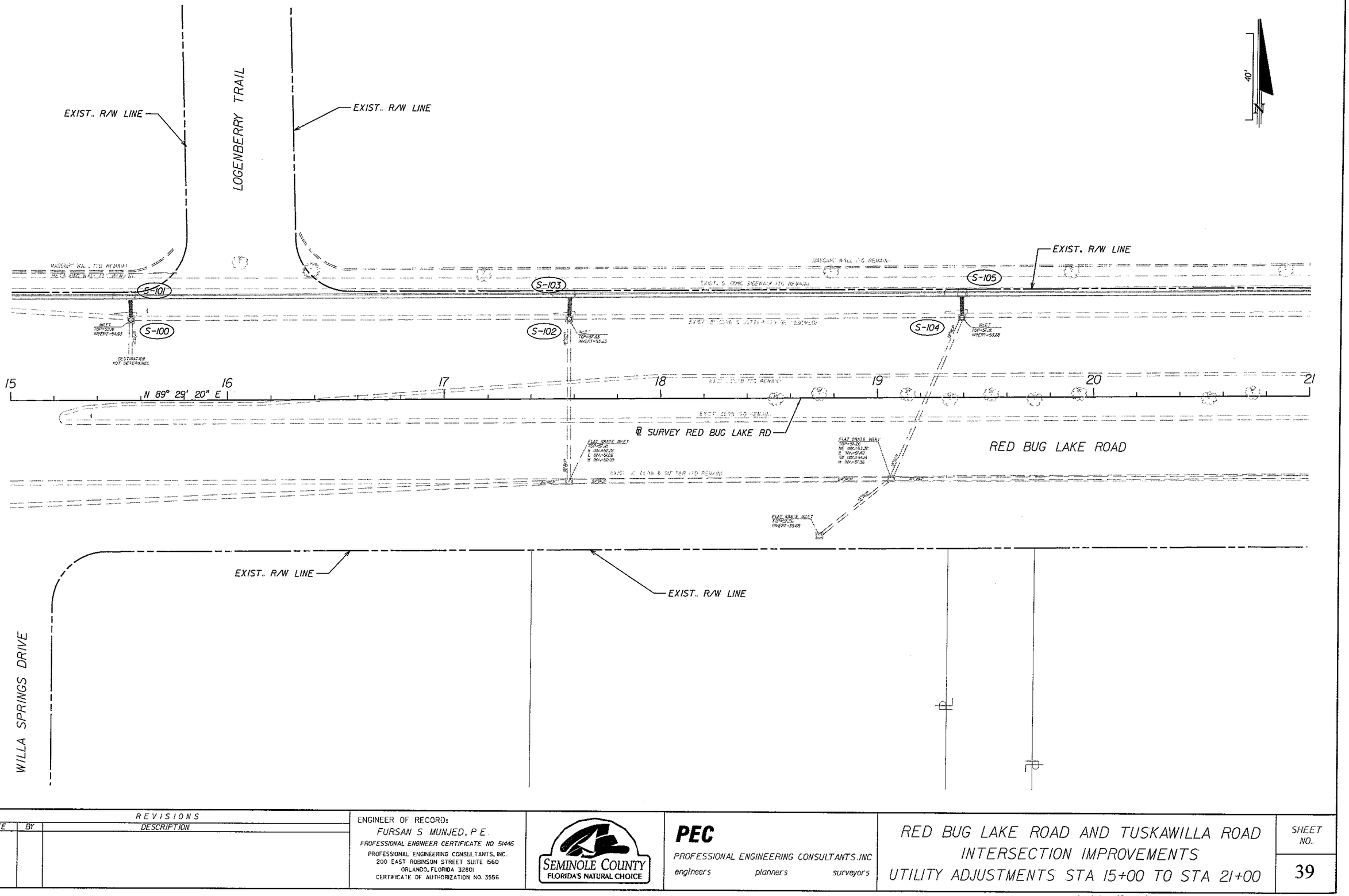

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RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS UTILITY ADJUSTMENTS STA 15+00 TO STA 21+00

SHEET NO.
39

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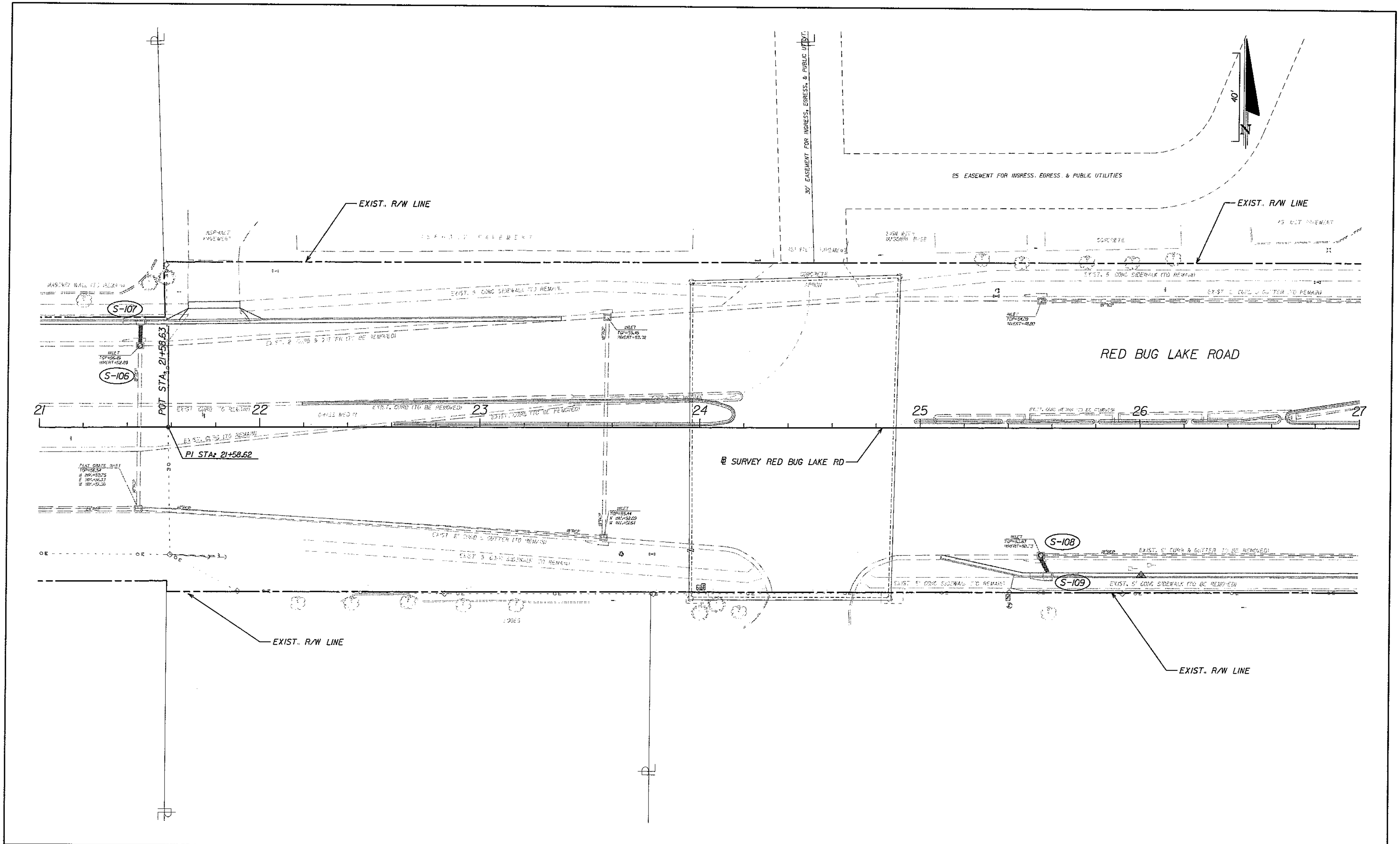

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RED BUG LAKE ROAD AND TUSKAWILLA ROAD
INTERSECTION IMPROVEMENTS
UTILITY ADJUSTMENTS STA 21+00 TO STA 27+00

SHEET NO.
40

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MATCHLINE SHEET 45

R/W LINE

TUSKAWILLA ROAD

N 33° 55' 28" W

151

R/W LINE

STA 30+00
℄ SURVEY RED BUG LAKE ROAD =
STA 150+00
℄ SURVEY TUSKAWILLA ROAD

24 ACCESS EASEMENT

R/W LINE

RED BUG LAKE ROAD

27 28 29 30 31 32 33

150

56°19'17"

℄ SURVEY
RED BUG LAKE RD

℄ SURVEY
TUSKAWILLA RD

S-110 S-111 S-112 S-113 S-114 S-115

CONCRETE APRON

R/W LINE

149

R/W LINE

BEGIN PROJECT
BEGIN M&R (RT)
STA 148+00.00 (RT)
℄ SURVEY TUSKAWILLA RD

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RED BUG LAKE ROAD AND TUSKAWILLA ROAD
INTERSECTION IMPROVEMENTS
UTILITY ADJUSTMENTS STA 27+00 TO STA 33+00

SHEET NO.
41

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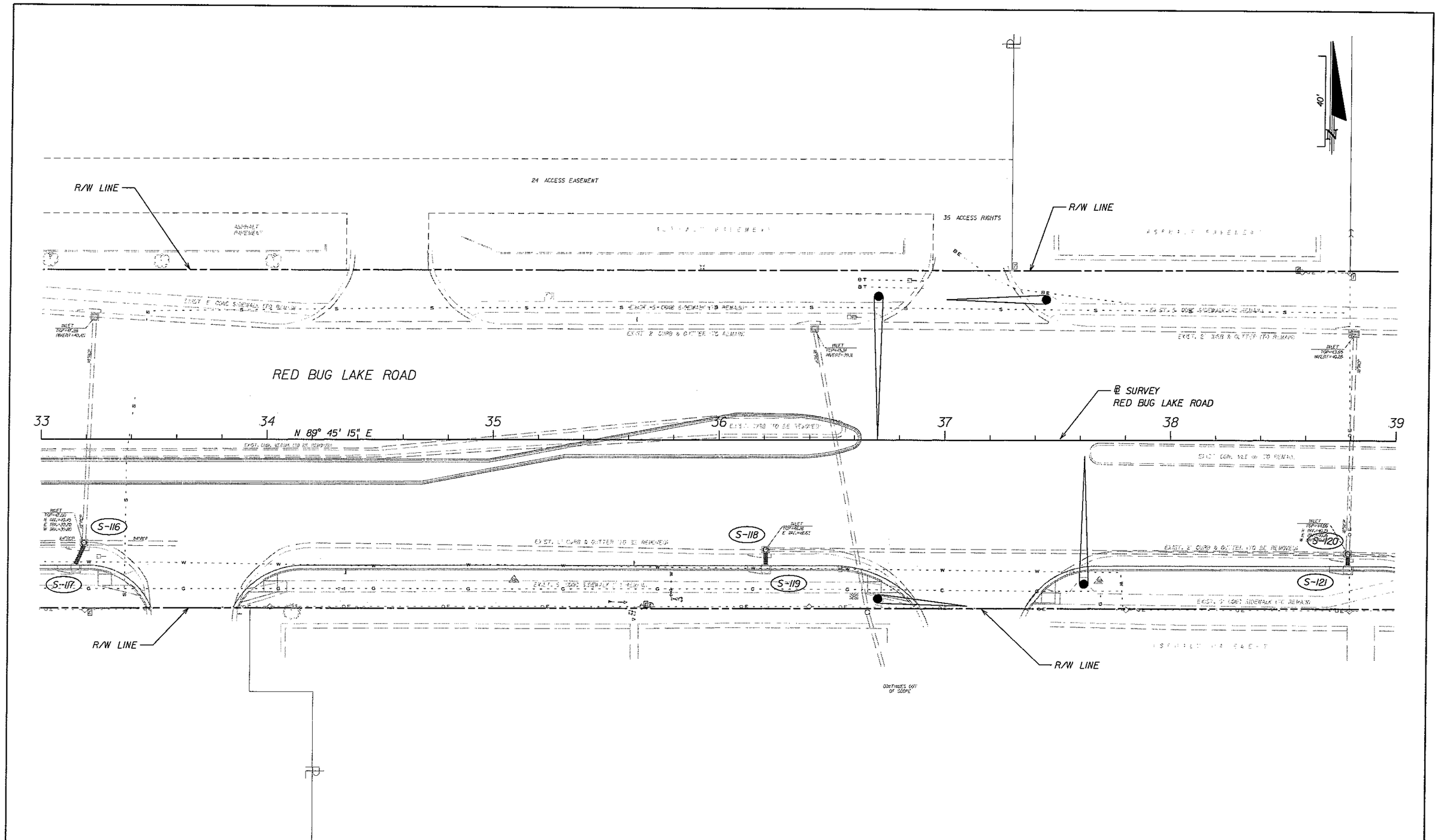

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SHEET NO.
42

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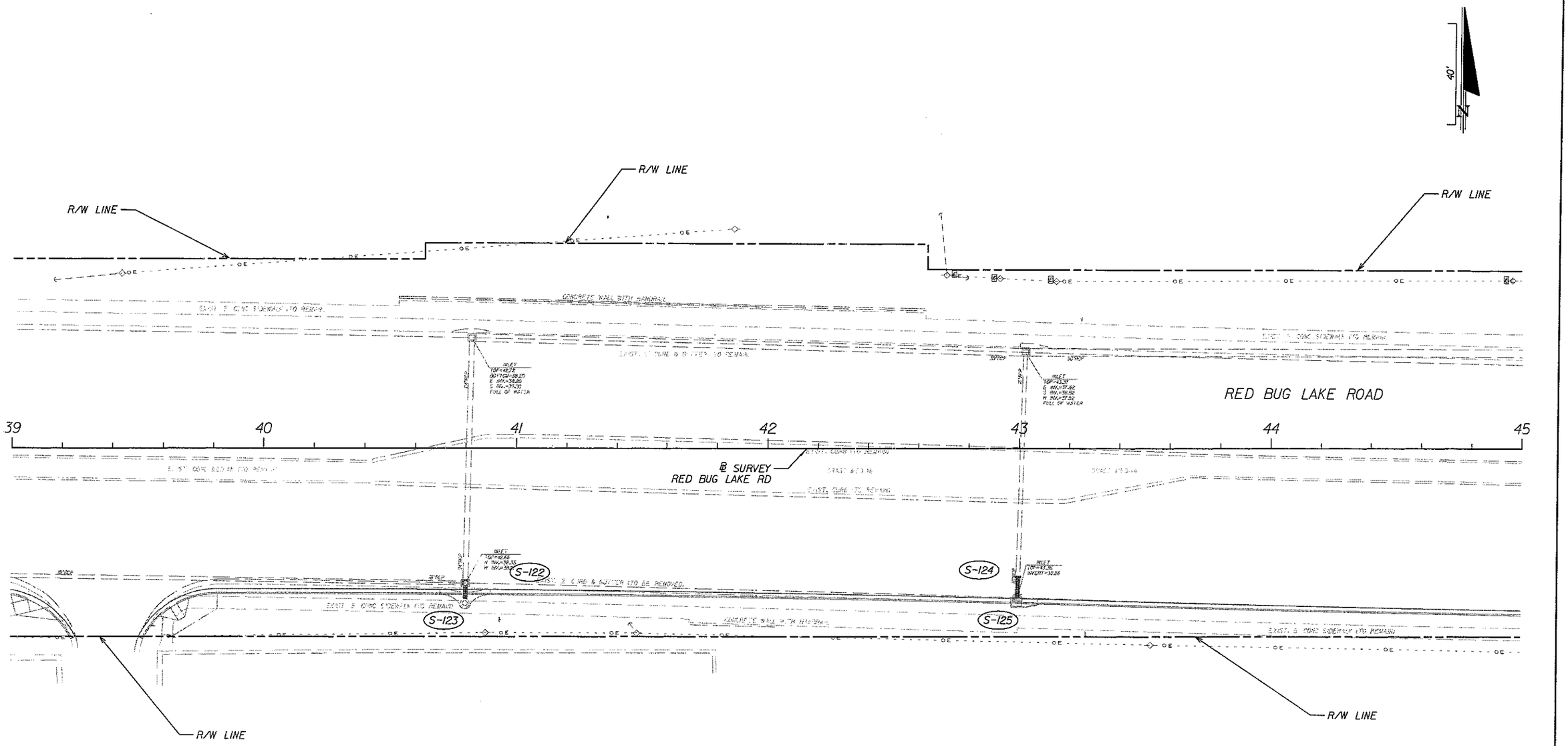

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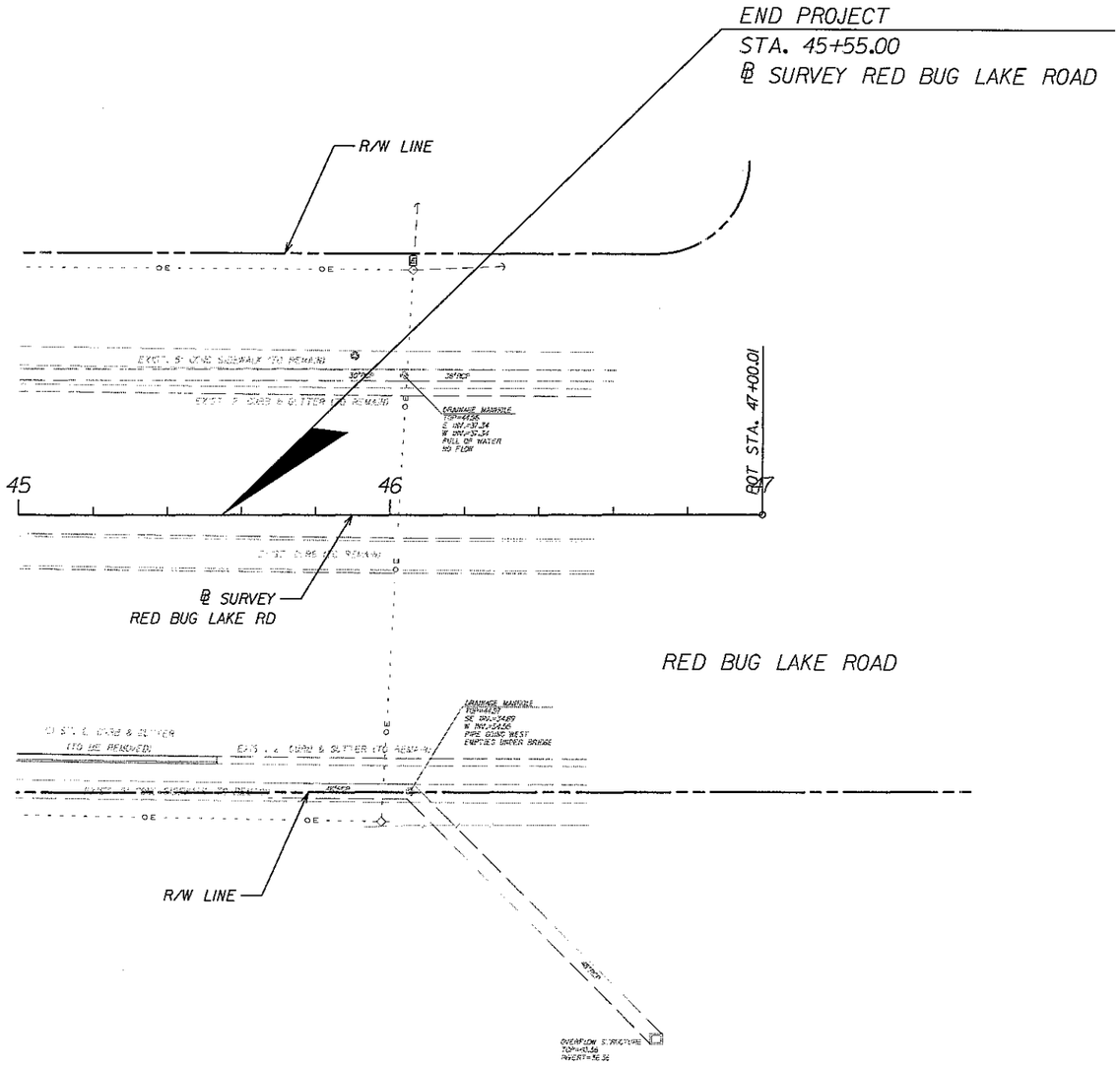
RED BUG LAKE ROAD AND TUSKAWILLA ROAD INTERSECTION IMPROVEMENTS UTILITY ADJUSTMENTS STA 39+00 TO STA 45+00

SHEET NO. 43



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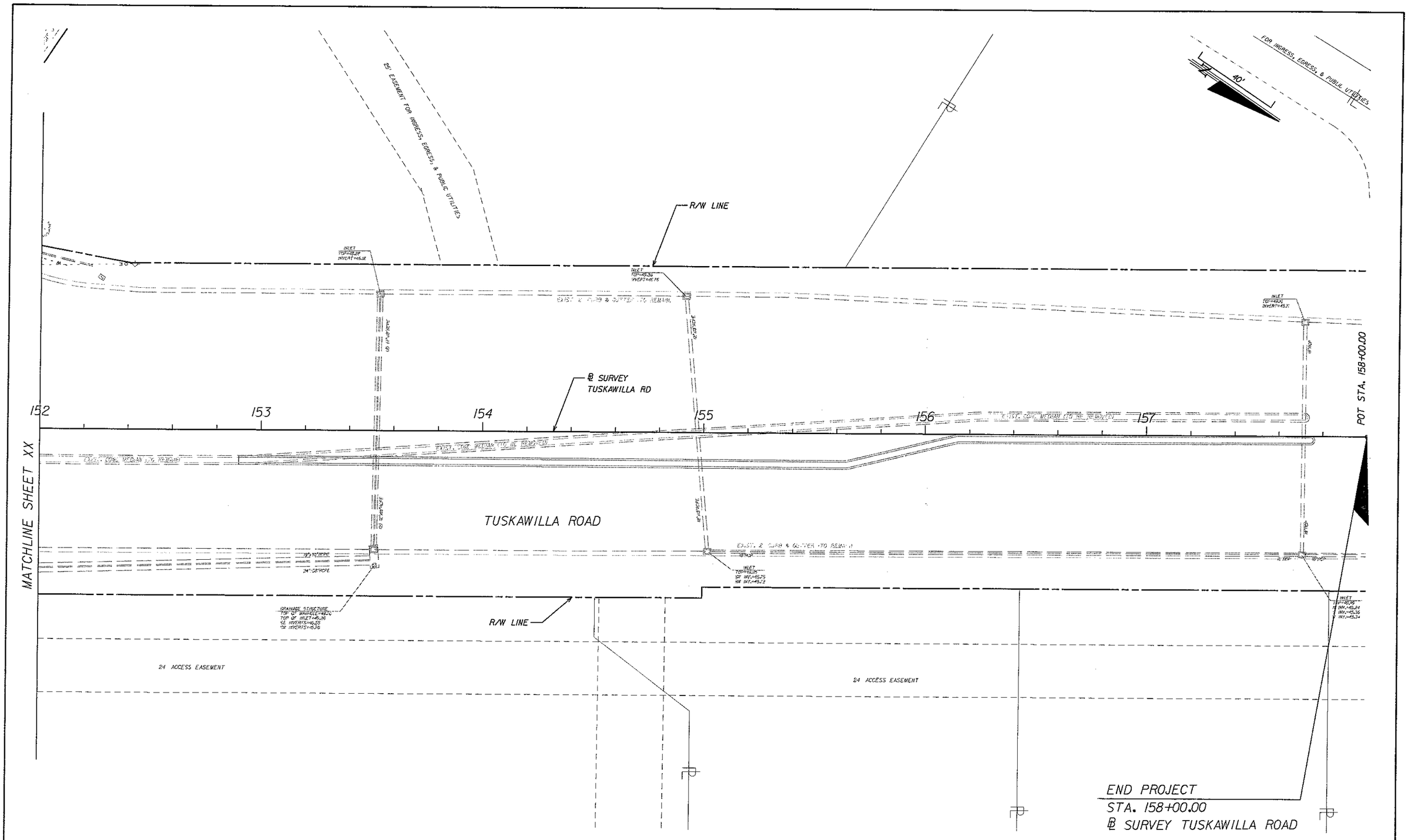
SHEET NO. 44



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UTILITY ADJUSTMENTS STA 152+00 TO STA 158+00

SHEET NO.
45

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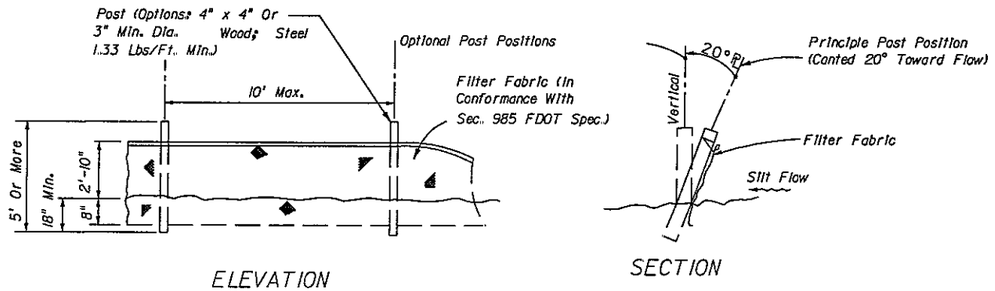
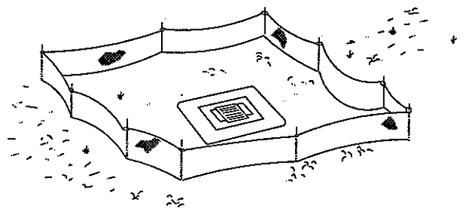


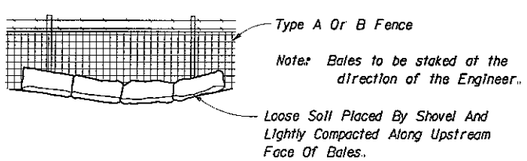
TYPE IV SILT FENCE



Type IV Silt Fence Protection
Around Ditch Bottom Inlets.

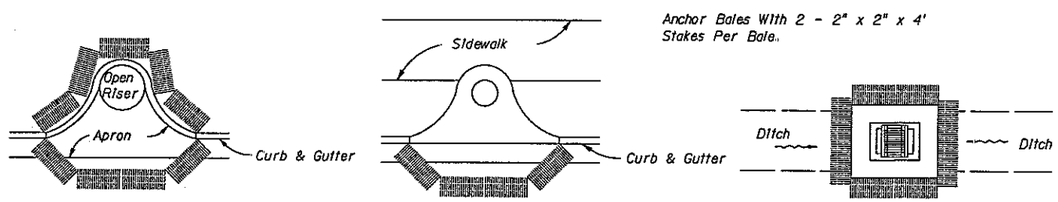
Do not deploy in a manner that silt fences will act as a dam across permanent flowing watercourses. Silt fences are to be used at upland locations and turbidity barriers used at permanent bodies of water.

SILT FENCE APPLICATIONS



GENERAL NOTES

1. THE CONTRACTOR SHALL EXECUTE ALL MEASURES NECESSARY TO LIMIT THE TRANSPORT OF SEDIMENTS OUTSIDE THE LIMITS OF THE PROJECT TO THE VOLUME AND AMOUNT THAT ARE EXISTING PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. THIS CONDITION WILL BE SATISFIED FOR THE TOTAL ANTICIPATED CONSTRUCTION PERIOD. PROVISION MUST BE MADE TO PRESERVE THE INTEGRITY AND CAPACITY OF CHECK WEIRS, SEDIMENT BASINS, SLOPE DRAINS, GRADING PATTERNS, ETC. REQUIRED TO MEET THIS PROVISION THROUGHOUT THE LIFE OF THE CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE HAY BALES, SILT BARRIERS, TEMPORARY GRASSING, ETC. AS REQUIRED TO FULLY COMPLY WITH THE INTENT OF THIS SPECIFICATION.
2. NO EXCAVATED MATERIAL SHALL BE STOCKPILED IN SUCH A MANNER AS TO DIRECT RUNOFF DIRECTLY OFF THE PROJECT SITE OR INTO ANY ADJACENT WATER BODY OR STORMWATER COLLECTION FACILITY.
3. THE SURFACE AREA OF OPEN, RAW ERODIBLE SOIL EXPOSED BY CLEARING AND GRUBBING OPERATIONS OR EXCAVATION AND FILLING OPERATIONS SHALL BE CONTROLLED, SO THAT THIS OPERATION WILL NOT SIGNIFICANTLY AFFECT OFF-SITE DEPOSIT OF SEDIMENTS.
4. INLETS AND CATCH BASINS SHALL BE PROTECTED FROM SEDIMENT LADEN STORMWATER RUNOFF UNTIL THE COMPLETION OF ALL CONSTRUCTION OPERATIONS THAT MAY CONTRIBUTE SEDIMENT TO THE INLET. (SEE NOTE 16).
5. AREAS OPENED BY CONSTRUCTION OPERATIONS THAT ARE NOT ANTICIPATED TO BE DRESSED OR RECEIVE FINAL GRASSING TREATMENT WITHIN THIRTY DAYS SHALL BE SEEDED WITH A QUICK GROWING GRASS SPECIES WHICH WILL PROVIDE AN EARLY COVER, DURING THE SEASON IN WHICH IT IS PLANTED. TEMPORARY SEEDING SHALL BE CONTROLLED SO AS TO NOT ALTER OR COMPETE WITH PERMANENT GRASSING. THE RATE OF SEEDING SHALL BE 30 POUNDS PER ACRE.
6. THE SEEDED OR SEEDED AND MULCHED AREA(S) SHALL BE ROLLED AND WATERED AS REQUIRED TO ASSURE OPTIMUM GROWING CONDITONS FOR THE ESTABLISHMENT OF A GOOD GRASS COVER.
7. IF AFTER 14 DAYS, THE TEMPORARY GRASSES AREAS HAVE NOT ATTAINED A MINIMUM OF 75% GOOD GRASS COVER, THE AREA WILL BE REWORKED AND ADDITIONAL SEED APPLIED TO ESTABLISH THE DESIRED VEGETATION COVER.
8. ALL FEATURES OF THE PROJECT SHALL BE CONSTRUCTED TO PREVENT EROSION AND SEDIMENT AND SHALL BE MAINTAINED DURING THE LIFE OF THE CONSTRUCTION SO AS TO FUNCTION PROPERLY WITHOUT THE TRANSPORT OF SEDIMENTS OUTSIDE THE LIMITS OF THE PROJECT.
9. ALL DISTURBED AREAS OUTSIDE THE EXCAVATION AND FILL LIMITS WILL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THEIR CONDITION PRIOR TO CONSTRUCTION.
10. THE CONTRACTOR WILL BE RESPONSIBLE FOR MAINTENANCE OF ALL NEWLY PLANTED GRASSES OR VEGETATION AND RETENTION/DETENTION FACILITIES UNTIL THE WORK HAS BEEN ACCEPTED BY THE CITY.
11. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE STABILITY OF EMBANKMENTS AND SHALL REPLACE ANY PORTION, WHICH IN THE OPINION OF THE ENGINEER, HAS BECOME DISPLACED DUE TO EROSION OR DUE TO CARELESSNESS OR NEGLIGENCE ON THE PART OF THE CONTRACTOR.
12. THE CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE, AND LOCAL LAWS AND REGULATIONS CONTROLLING POLLUTION OF THE ENVIRONMENT. MEASURES SHALL BE TAKEN BY THE CONTRACTOR TO CONTROL EROSION AND SEDIMENT RUNOFF FROM THE SITE DURING CONSTRUCTION. SUCH METHODS SHALL BE IN ACCORDANCE WITH THE CURRENT FLORIDA DEPARTMENT OF TRANSPORTATION STANDARDS.
13. ABSOLUTELY NO WORK WILL BE ALLOWED WITHIN ANY CONSERVATION AREA, BUFFER AREA, MITIGATION AREA OR DESIGNATED WETLAND AREA UNLESS SO SPECIFICALLY DESCRIBED BY THE PLANS AND GRANTED BY REASON OF PERMIT FROM THE GOVERNMENTAL ENTITY HAVING JURISDICTION OVER SAID AREA.
14. PRIOR TO CLEARING AND GRUBBING, THE LIMITS OF WETLANDS, BUFFERS, AND MITIGATION AREAS SHALL BE CLEARLY MARKED ALONG THE PROPOSED RIGHT OF WAY LINE TO PROTECT THESE AREAS FROM ENCROACHMENT FROM CONSTRUCTION ACTIVITIES.
15. ALL FILL EMBANKMENT AND GRADED AREAS SHALL BE PROTECTED AGAINST EROSION BY METHODS STATED IN "SECTION 104," F.D.O.T. STANDARD SPECIFICATIONS FOR BRIDGE AND ROAD CONSTRUCTION. SIDE SLOPE MAY BE SEEDED AND MULCHED, PROVIDED THAT THE MULCH MATERIAL IS DISC HARROWED AND THE SIDE SLOPES ARE NEITHER GREATER THAN 3:1 NOR PART OF A DRAINAGE CONVEYANCE.
16. EROSION CONTROL AT ALL INLET DRAINAGE STRUCTURES DURING CONSTRUCTION SHALL BE DONE IN ACCORDANCE WITH INDEX No. 102



PROTECTION AROUND INLETS OR SIMILAR STRUCTURES

REVISIONS		
DATE	BY	DESCRIPTION

ENGINEER OF RECORD:
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ORLANDO, FLORIDA 32801
CERTIFICATE OF AUTHORIZATION NO. 3556

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FLORIDA'S NATURAL CHOICE

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RED BUG LAKE ROAD AND TUSKAWILLA ROAD
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EROSION CONTROL DETAILS

SHEET NO.
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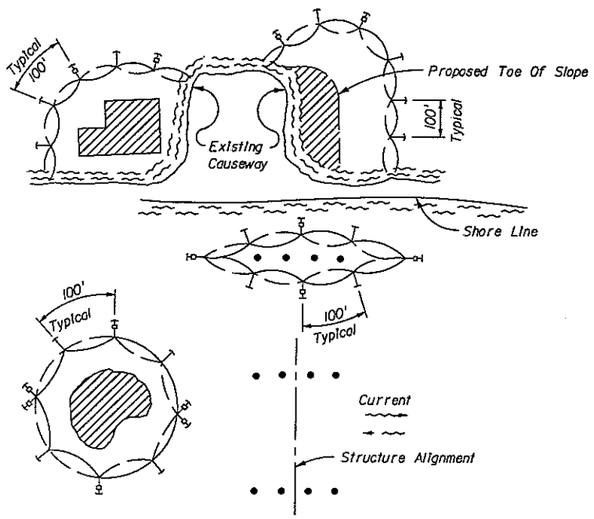


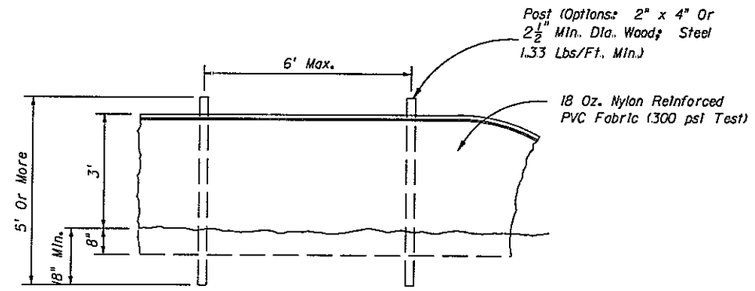
LEGEND

- Pile Locations
- Dredge Or Fill Area
- Mooring Buoy w/Anchor
- Anchor
- Barrier Movement Due To Current Action

NOTES:

1. Turbidity barriers are to be used in all permanent bodies of water regardless of water depth.
2. Number and spacing of anchors dependent on current velocities.
3. Deployment of barrier around pile locations may vary to accommodate construction operations.
4. Navigation may require segmenting barrier during construction operations.
5. For additional information see Section 104 of the Standard Specifications.

TURBIDITY BARRIER APPLICATIONS



STAKED TURBIDITY BARRIER

NOTES:

1. The contractor will be responsible for compliance with all general and specific conditions of all project permits.
2. If required by the Engineer, additional floating turbidity barriers and haybales and/or staked silt fences will be used as directed to contain turbidity and erosion.

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N.P.D.E.S. STORMWATER POLLUTION PREVENTION PLAN
FOR CONSTRUCTION ACTIVITIES

The Contractor shall prepare and provide the Seminole County with a special plan for the prevention, control, and abatement of erosion and water pollution. The Contractor shall pay all permitting fees. (To be included under pay item 104-99)

This plan shall be prepared in accordance with the general requirements and/or any special conditions of all permits which authorize the construction of the project. In the event there are no permits required to construct the project, or they do not contain special conditions relating to erosion and water pollution, the project Stormwater Pollution Plan (SWPPP) for Construction Activities shall be governed by Florida Department of Transportation Standards Specifications for Road and Bridge Construction (2004), Subarticles 7-1.1, 7-2.2, 7-8.2, and Articles 104.1 through 104.9.

When a National Pollution Discharge Elimination System (N.P.D.E.S.) Permit has been issued or approved for the project by the FDEP. The Contractor's SWPPP will include the Erosion Control and Stormwater Management Plan during construction and all additional measures he will employ to dispose of, control, or otherwise prevent the discharge of solid, hazardous, and sanitary wastes to waters of the U.S. Procedures to control off-site tracking and spilling of soil by vehicles and construction shall also be included. The Contractor shall include a procedure for cleanup and reporting of non-storm water discharges such as contaminated ground water and accidental spills of contaminants. The Contractor's part of the SWPPP, including required signed certification statements, shall be furnished to and approved by the City of Ocoee prior to initiating any soil disturbing activities.

The SWPPP for Construction Activities shall be prepared in accordance with the format and guidelines set forth in the EPA Document Number 833-R-92-001 dated October 1992, titled 'Stormwater Management for Construction Activities' provisions of Section 403.0885, Florida Statutes, and applicable rules of the Florida Administrative Code. Construction activities that disturb one or more acres of land area are considered industrial activities under 40 CFR Part 122.26 (b) (14). This permit constitutes authorization to discharge stormwater associated with industrial activity to surface waters under the NPDES. Under the State of Florida's authority to administer the NPDES Stormwater program at 403.0885, F. S., operators that have stormwater discharge associated with large or small construction activities to surface waters of the State, including through a Municipal Separate Storm Sewer System (MSA), must obtain coverage either under a Notice of Intent (NOI) Generic Permit issued pursuant to Chapter 62-621, F.A.C., or an individual permit issued pursuant to Chapter 62-620, F.A.C. The SWPPP for Construction Activities shall describe, but not be limited to, the following items or activities.

(1) For each phase of construction operations or activities, the Contractor shall supply the following information:

- (A) Locations of all erosion control devices.
- (B) Types of all erosion control devices.
- (C) Estimated length erosion control devices will be in operation.
- (D) Monitoring schedules for maintenance of erosion control devices.
- (E) Method of maintaining erosion control devices.
- (F) Methods of containment or removal of pollutants or hazardous wastes.

(2) The Contractor shall furnish Seminole County with the name and telephone number of the person who will be responsible for monitoring and maintaining the erosion control devices. The person who is performing the inspections is to be a qualified inspector (a person who is certified through the DEP Stormwater, Erosion, and Sedimentation Control Inspector Training Program). Inspections are to occur at least once every seven calendar days and within 24 hours of the end of a storm that is 0.50 inches or greater.

(3) The Contractor shall submit a copy of his SWPPP for Construction Activities to Seminole County for their review and approval on or before the project preconstruction meeting. No construction activities shall commence until: 1.) the SWPPP for Construction Activities has been reviewed and approval received from the City of Winter Garden. 2.) Notice of Intent shall be submitted to the FDEP 48 hours prior to construction activities. The Contractor shall submit two (2) copies of the approved SWPPP for Construction Activities to City of Winter Garden and one (1) copy of the approved SWPPP for Construction Activities to the St. John's River Water Management District, 618 East South Street,

(4) The Contractor shall be responsible for implementing, monitoring and modifying the SWPPP for Construction Activities to meet changing project site conditions.

(5) The Contractor shall maintain a copy of the approved SWPPP for Construction Activities at a central location on the project site at all times and be responsible for compliance with the approved SWPPP for Construction Activities. The Contractor shall prepare and submit all annual reports required by permit. Full payment for work and materials necessary for preparation, submittal and subsequent modification of the Contractor's SWPPP for Construction Activities and for implementing it during construction, including permitting fees shall be included in the Erosion Control Pay Item No. 104-99 (LS.)

REVISIONS		
DATE	BY	DESCRIPTION

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SHEET NO.
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